

to/from

Designing a Non-Verbal Reciprocal Online Connection
Case study of Japan Support Flags

Satoko Hinomizu

MASTER'S THESIS

Aalto University School of Arts, Design and Architecture
Media Lab Helsinki

Author Satoko Hinomizu

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Abstract

The Internet has enabled people to share information without boundary of time, locality or physical space and people increasingly share their opinions, knowledge, photos and even intimate feelings on everyday life. After the Tohoku Earthquake of 11 March 2011 in Japan, countless support messages were sent from the world via the Internet, typically by social media to express their sympathy, but the language barrier and lack of reciprocal feedback seemed to be a challenge. Japan Support Flags (JSF) is a design project which explores an approach to build a non-verbal reciprocal online connection. The way to deliver personality with the message is also considered. As a prime motive it aims to deliver support messages of the world to the people who are affected by the Earthquake and help to relay people's sympathy. The practical part of the thesis consists of the website and two art installations. The written thesis examines the concept of a photograph as a message and an interaction design to connect the sender and the recipient of the message in a simple and effortless way. The two installations present an approach to transform a two dimensional product into a three dimensional artifact. The process of transformation worked to further develop the concept of JSF. The thesis is written from a user experience designer's point of view, which examines the concept development, process of prototype making and collecting feedback for next iteration. The production part of the thesis can be found at: <http://japansupportflags.com>.

Keywords user experience design, visual communication, non-verbal, reciprocity, user interface, geolocation

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1 INTRODUCTION

This master's thesis is a discussion on 'Japan Support Flags', a design project by Satoko Hinomizu to deliver support messages of the world to the people in Japan who were struck by of the Tohoku Earthquake and tsunami of 11 March 2011 (formally called the Great East Japan Earthquake), and are now engaged in the effort of recovering and rebuilding in its aftermath. The thesis work consists of the production process of Japan Support Flags website, two installations (exhibitions) and the accompanying written part.

1.1 Background: Disaster Relief and the Internet

The Earthquake was measured at a magnitude of 9.0 and the epicentral area encompassed an area over 100,000 square kilometres (Ministry of Land, Infrastructure, Transport and Tourism, 2011). The coastal area of east Japan suffered catastrophic damage from the tsunami towering over ten meters. The casualties and missing persons counted up to 19,000, and evacuees were reported to be 400,000 at its peak (National Police Agency, 2012). Followed by the radiation leak occurring at Fukushima Daiichi Nuclear Power Plant, it became the worst disaster for Japan in the postwar period. The news spread over the world instantly through TV, newspapers

and also the Internet. The reaction of the people on the Internet was particularly quick as has been the case in most recent global events, so much so that mainstream media sometimes seemed to be reporting from comments on the Internet. Besides sending e-mails to confirm safety of family and friends, people expressed their grief and encouragement for the victims and shared the links for donation sites. Countless relief projects were spread through the Internet and gathered participants from all over the world. These activities and sympathy towards Japan spread widely over the Internet and were truly appreciated by the people in Japan and Japanese living abroad like myself.

Over the last decade, the Internet has become an integral part of our everyday communication and its use to create social interaction is increasing. This computer-mediated communication has enabled the average person to share information without boundary of time, locality or physical space and people increasingly share their opinions, knowledge, photos and even intimate feelings on everyday life on a public forum. While the web 2.0 or 'the read/write web' enabled everyone to be both consumer and producer of content online and changed the patterns of Internet use, this trend is even more enhanced with social media. Andreas M. Kaplan and Michael Haenlein defines social media as 'a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content' (Kaplan & Haenlein, 2010, p. 61). A typical example are the social networking services (SNS) such as Facebook or micro blogs such as Twitter, the core function of which is to make meaningful interaction between people.

1.2 Collective Support Messages on Social Media

After the disaster, social media displayed its competence as a platform for social interaction. People posted messages on Facebook and Twitter to express their individual condolences and prayers to the victims in Japan. The messages were directed to a wider audience living in Japan and the messages were widely available

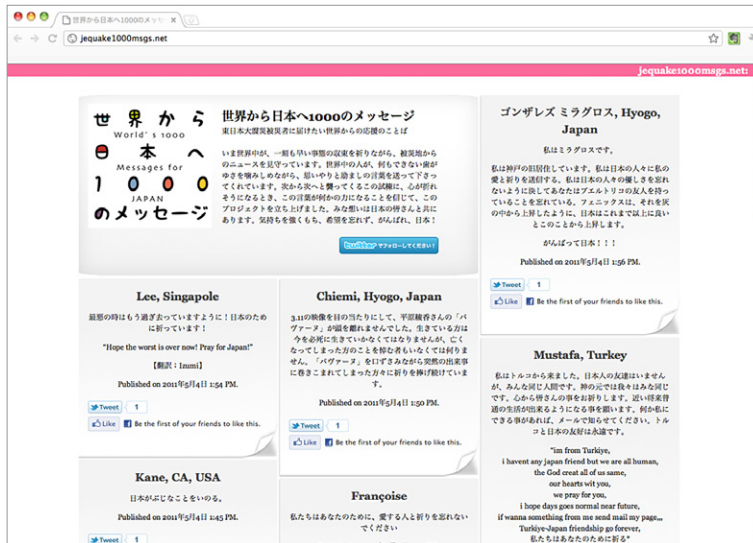


Figure 1. World's 1000 Messages to Japan

on public sites, which became de facto bulletin boards for the messages. I will present three examples.

The first example is a project called World's 1000 Messages to Japan¹ (Figure 1). A group of Japanese students studying abroad launched a Facebook fan page on the same day of the Earthquake, which aimed to deliver the messages of caring people from the world to the victims in Japan. The concept is that people would write wall messages to the victims in Japan, and those messages would then be translated into Japanese by the volunteers who visited the page and delivered via their website, Facebook and Twitter account. Their website was launched within a few days after the Earthquake and delivered Japanese translated messages together with the original messages. Messages could also be sent by email. The project quickly spread through Facebook and Twitter, and gathered more than 1100 messages from over 71 countries around the world.

1 <http://jequake1000msgs.net/>

The second example is from Twitter. People tweeted with the hashtag #prayforjapan, #tsunami with messages of caring and prayer. On 11 March, #PrayforJapan, #tsunami, #japon and Text REDCROSS were the top four trending topics worldwide on Twitter. (Olivarez-Giles, 2011)

Third example is Messages for Japan², a web service created by Google (Figure 2). This website delivers support messages from all over the world to the people of Japan. The site is designed to make best use of Google's own existing services such as Google Translate and Google Maps. All the messages are automatically translated into Japanese, which is extremely important for Japanese audience since majority of Japanese people are not used to reading foreign text. It has a great advantage for the writer too that they know their message will reach the Japanese people. Messages are displayed on the world map which intuitively tells how wide spread the messages are from. Users could switch between map view and read messages view, which are both very visual oriented and beautifully executed. The messages posted by July 2012 are over 41,500, has received 61,000 likes by Facebook like button, and tweeted over 4,000 times which makes it clear that it gathered lot of attention. These three examples are all extremely successful at fulfilling their aim to deliver the support messages from the world to people of Japan and cheer the sadly affected nation.

1.3 Limitation of Ongoing Projects

Despite the fact that those support messages are highly valued and appreciated, it was eventually noticed that these ongoing projects had some limitations. Firstly, translation is an issue. The majority of messages are text based and require translation from the original language into Japanese, which made them heavily dependent on volunteer work or display awkwardness in the auto-translated text, which prevents native Japanese speakers from fully empathizing with the message. For example, the translated message on the next page actually reads 'You (singular) are flexible people, our hearts are with you for this time of difficult recovery.' in Japanese while

2 <http://www.messagesforjapan.com/>

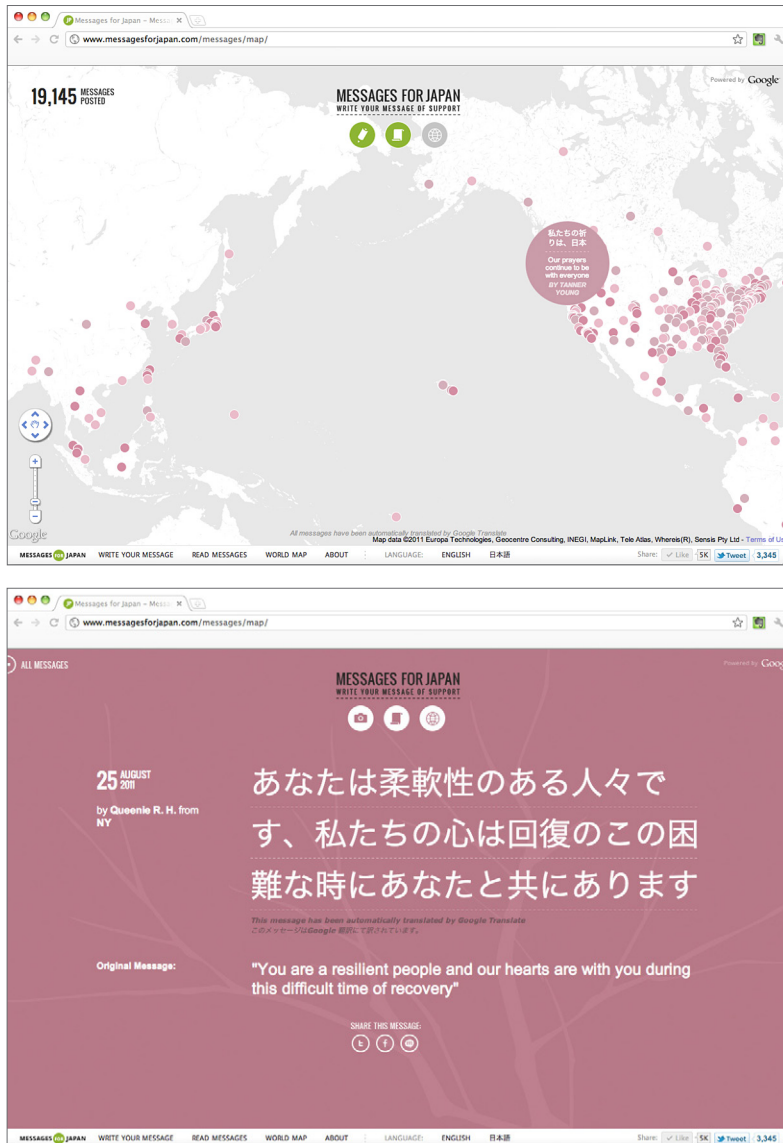


Figure 2. Messages for Japan. Above: Messages mapped on a world map. Below: Auto translated Japanese message display incomprehensible translation from original message

the original message was ‘You are a resilient people and our hearts are with you during this difficult time of recovery.’ Secondly, the message displaying websites or Twitter feeds did not suggest if the message has reached someone, or if it did, it was only a share button such as ‘like’ for Facebook or ‘tweet’ for Twitter which indicates that the message has been viewed, but not if the viewer was actually in Japan. The same issue applied for the Japanese recipients who wanted to reply to the messages. There was no way for them to express their appreciation directly to the sender of the message other than pressing the Facebook like button or retweeting the message. Many people wrote their feeling of gratitude on their own blogs and social media sites, but it was not possible for the individual message senders to receive the feedback directly. Moreover, not many Japanese people feel comfortable in writing in English, and since they believed that foreign people would not understand messages in Japanese, they felt extremely limited in the way to express their appreciation. Finally, the messages were banal. After the umpteenth message expressing sorrow and sympathy the repetition becomes numbing and every message starts to look the same although there is so much personal emotion and empathy embedded in each message. The idea for Japan Support Flags project was developed as a way to overcome these limitations.

In addition on a personal note, as a student studying in Finland, I personally received many messages of condolence from fellow students, teachers, other friends and even casual acquaintances/strangers in town. I really appreciated to hear that people care about my country and it was the same with my family in Japan. I wished if there was a way to relay these feelings in a way that the empathy from both sides could be understood. Japan Support Flags project also has an intention to implement this personal desire.

1.4 Objectives of the Project

The objectives of the Japan Support Flags project (JSF) are

- to show the supporting messages from the world to Japan,
- by non-verbal means (communicate empathy without translation),
- to make it interactive to relay recipients' response,
- to personalize the message, and
- to produce it over digital media. (Physical media such as newspaper ads or paper letters were not chosen since digital media is the most effective way to reach people from all around the world now.)

The above aims and means closely reflected the research interest of myself as a user experience designer. I was also able to engage the assistance of programmers associated with the school. This allowed me to incorporate elements at a sufficient level of inter-activity and technical sophistication. Therefore this project was chosen as the topic of my master's thesis by discussing the academic analysis of the project. The personal aim in designing a piece of technology which helped to relay people's sympathy was also a prime motive.

1.5 Structure of the Thesis

This written work is directed to the academic and student community of the Media Lab and designers who are interested in visual communication. The study is laid out in the following manner: Chapter 2 provides the design concept of the project, including the interface design of the site. Previous works are mentioned as a conceptual reference to JSF. Chapter 3 displays the detailed process of production of JSF, from first mock-up, full prototype and second iteration (completed website) followed by feedback and observations collected at each step. Two exhibitions are also mentioned. The last chapter summarizes the overall findings of this thesis.

2 CONCEPT

This chapter will discuss the design concept of Japan Support Flags project. What should the design be for a piece of technology with which to help relay people's sympathy? It needed to be extremely simple so that the message is understood clearly without translation, shows personality, is easy to participate, and also aesthetically appealing. The design process was started from redesigning the message itself. Next, the method to convey the reciprocity of emotions was considered and an interactive user interface implemented.

2.1 Main Visual Concept

Message by photography came to mind naturally as a counterpoint to the written text message. It is one of the most familiar visual communication tools and also is not bound to any specific language. In other words, 'Photography is the only 'language' understood in all parts of the world, and, bridging all nations and cultures' (Helmut, 1962, p. 229). People are increasingly becoming used to taking photos, uploading and sharing them on the Internet, so it would be easy for them to participate.

2.1.1. Photograph of Japanese Flag as a Message

The central idea was to design a vehicle for crafting messages taking the form of Japanese flags, which emerges in the photograph by framing a red object with a white postcard with a circle cutout in the middle. This postcard was named the ‘flag card’ (Figure 3).

Although photographs are a ‘global language’ as Helmut states, it does not mean they will present unified interpretation. As Sontag (1977) noted ‘Photographs are often invoked as an aid to understanding and tolerance. ... But photographs do not explain; they acknowledge’ (p. 111), photographs convey multiple layers of meaning and different interpretations. Therefore, a system designed to relay the intended emotional feeling to the viewer. The idea of a flag card is to give a simple frame to form a message to convey the intended empathy.

The national flag figure represents the nation and the people of that country, and there was a concern that using a national symbol will bring nationalistic connotation. However, in this context of disaster it is clear that the flag signifies a message of support for Japan and the Japanese people. Also because the message was to be sent by non-Japanese people, it is clear that the message sender does not use the flag symbol to express their nationalism. Also thanks to the simple structure of the Japanese flag, it has a strong visual impact and a flag card can be made easily.

Importantly, there is room for interpretation of the message within a certain framework. Because of the flag card system and also because they are seen within the context of JSF website, the photographs are set in a framework of sending support messages to Japan. Within that framework, the photographs of a Japanese flag can be interpreted in many ways such as ‘cheer up’, ‘don’t give up’, ‘I am thinking about you’, or a warm wish which can’t be formed as words. This means that this format accepts a wider range of emotions than written text. Even when people have a desire to show their empathy, it is a difficult process to put this emotion into text. It is easier to show it as photograph since they are less analytical. This is one of the big advantages of using photography. With the simple white flag card, the message is



Figure 3.
A photograph message taken
with a flag card

literally given a frame to form a clear message to express their condolences to Japan, but it still allowed room for composition and interpretation for people to incorporate their multi-faceted emotion. Later in the process, the room for interpretation turned out to have an advantage for the recipient of the message also. I will discuss about this in chapter 3 in the analysis of user feedback.

2.1.2. Photograph in Digital Format

In addition, since now almost everyone takes photographs in digital format instead of on film and paper, it is easy to use them as a component in a digital platform which fulfils one of the original aims. Risto S. and David F. (2011, pp. 95–98) defines five characteristics of digital photography as reproduction (the possibility of reproducing digital images infinitely, without loss of quality, and in costless way), transferability (the possibility of sending or receiving an image immediately after its capture, over vast geographic distances in very little time, and images can also be found and viewed independently of time and space), editing (cropping, filtering, and automatically enhancing), and convergence (photographs are turned into binary data and they can be treated as any other file on a computer). Among the five, the reproduction and transferability of the digital photographs became the key characteristic in this project to communicate the message in photographs over distance without effort.

2.1.3. Personalization of the Message

Local scenery and everyday objects around the sender cropped behind the flag card crystallizes the moment of remembering Japan in the sender's everyday life. This brings the personality of the individual who took the photograph and makes it feel that the message is from a real person. Sometimes the hand which holds a flag card will emphasize the existence of the individual behind the camera. Every photograph has a different background and conveys the story that ordinary people who are living somewhere totally different from Japan have had the moment of

remembering about Japan and wishing to send their empathic feeling.

A short movie message made by a French choreographer, Jérôme Bel, can be mentioned as a project which expresses a similar concept. The movie is created as a part of the movie project organized by The Institut Franco-Japonais de Tokyo et Yokohama (l'Institut Francais du Japon), in which they asked 60 French artists to create a movie message to express the solidarity between France and Japan after the Earthquake. The final movie *80 minutes pour le Japon* was uploaded to their website on September, 6 months after the Earthquake (l'Institut Franco-Japonais de Tokyo et Yokohama 2011). Jérôme Bel has made a short 50 second movie which shows Japanese products found in his own house. As Ogiwara states (2011), the scenery of everyday objects such as Hello Kitty cup, ceramics, and Japanese food being naturally integrated in a French home depicts the strong tie between France and Japan (Figure 4). There is no verbal explanation in this movie, but this simple movie piece presents the moment of thinking about Japan in his real life and evokes emotional feeling.

The idea of the flag card has similar intention as this movie. The everyday scenery cropped as a background of the photograph brings reality. Compared to the text messages which just shows the caring messages displayed in the same font, the photograph messages are more personalized, all different, and it facilitates the perception that the message is from real people. The immediacy of real life people who have taken time to think about Japan evokes a strong emotional feeling.

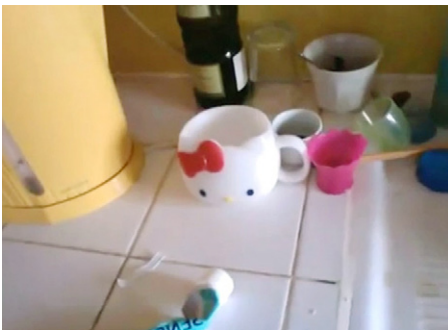


Figure 4. Jérôme Bel's submission to *80 minutes pour le Japon*

2.1.4. Other Conceptual References

Three examples of showing support are introduced as a conceptual reference to JSF.

Senbazuru (Thousand Origami Cranes)

Senbazuru is a group of one thousand origami paper cranes tied together by string (Figure 5). The Crane is a symbol of long life, therefore it is believed that thousand origami cranes will bring long life or recovery from illness or injury. It is often made as a gift to wish luck for someone facing difficulty. It is also recognized as a symbol of peace because of the story of Sadako Sasaki, a girl who was exposed to the nuclear bomb in Hiroshima and passed away before she completed her senbazuru. More than ten million origami cranes are sent to Hiroshima every year from all over the world, wishing for world peace ('Recycle origami cranes' 2011). This displays a traditional background of sending wishes through physical objects, a core idea of JSF. People are emotionally touched by the fact that each crane is made by hand, representing the warm wish and also the time spent thinking about the recipient. No text is required to receive the message.

It is also a good example of a global memorial, people's continuous reaction for a big negative event such as the tragedy in Hiroshima. Sembazuru shows my cultural background and why the idea of JSF, sending messages through an artifact came up. In addition, Hiroshima city is now facing the issue of keeping 110,000,000 cranes which weighs 93 tons which is stored since 2002 according to the policy of the



Figure 5. Senbazuru

previous mayor. Some projects, such as recycling them as notebooks and sending them to developing countries, have been started while other people are also seeking a digital solution for the future of senbazuru (Thousand crane project, n.d.). This development is something which JSF could contribute to.

Digital Badges and Ribbons

People wear badges to express membership, statement, achievement and more. Ribbons are also worn in a similar way as a symbol to display awareness and support, for example the Pink Ribbon³ as a symbol of breast cancer.

Badges and ribbons are now seen together with the people's profile image at social network services. In 2009, the Israeli software developer Arik Fraimovich started a campaign to change Twitter avatars to have green overlay or green ribbon on top to show support for the people who fight for democracy in Iran⁴ (Figure 6). Green is chosen since it was the official colour of the movement. Together with support tweet posted at the same time, the project spread to over 260, 000 people on Twitter.

As another example, many people added 'Pray for Japan' badges to their website or avatar picture on social media, such as Facebook and Twitter after the Tohoku Earthquake (Figure 7). Badges are made voluntarily by using services for example Picbadges.com⁵ and people could add them to their SNS profile with one click. Various designs existed, however the colour combination of red and white and text of 'Pray for Japan' were used almost as default. The badges spread widely, with one popular badge counting 119,000 usage.

Digital badges and ribbons are easy to try and quickly spread virally. The message of support is delivered with a simple visual object. A key observation from these

3 <http://pinkribbon.org/About/History/tabid/199/Default.aspx>

4 <http://helpiranelection.com/>

5 <http://www.picbadges.com/pray-for-japan-10/1319047/#>



Figure 6. Twitter avatars with green layer or ribbon for Help Iran Election campaign



Figure 7. Examples of Pray for Japan Badges

examples is that the context needs to be shared by both the users and the audiences. In Help Iran Election campaign, some people wondered why suddenly their friends' icons turned into green since there were no clue to decode the visual other than the first support tweet message. Associated text makes the context and message more clear as seen on Pray for Japan badges. Timing is also important to understand the context. Naturally these add-on badges work best as a campaign for a limited time, while the topic is fresh in the mind of people. After one and a half year since the Earthquake, most badges have been removed. However some are still seen on social media, and possibly people would be reminded of the Earthquake because the disaster was so epic. However with the passage of more time, the context becomes increasingly weaker. Badges and ribbons are referred to as great examples of visual communication made globally over digital media, a primary aim of JSF.

Photograph and Video Messages Sent After the Earthquake

Support messages from people around the world were not just written in text, but a number of photographs and video messages were also created. They were uploaded on Facebook, Youtube, web pages setup for disaster relief and personal blogs and shared over the world. As an attempt to gather those images, a free publication World 'KIZUNA' Graph (OnDeck, 2011) displays 108 photographs collected from 69 countries and regions. One example is a photograph of Indian students holding message boards (Figure 8). Another example is a video message uploaded from United

States (TATSUYA 2000, 2011) (Figure 9). Many of the photographs and videos have a common style of people holding message boards with sympathetic words. Although the messages were quite simple such as ‘We are praying for you’ or ‘Recover soon’, a translation is required as one Japanese comment posted by 7859398202 (the user name of the commentator for the video) says ‘I can’t read them...I wish if there were a subtitle’ (2012, Translation by the author). However, translation was not a big problem in this case since other non-verbal features helped to understand what the sender is trying to say. Messages delivered with people’s kind faces were very powerful and touching. However two challenges can be noted. One is the privacy issue. Some people do not feel comfortable in showing their faces in public which could prevent them from showing their empathy. Technical skills is another challenge. It requires more skills of media editing, and skills of storytelling through visual material. JSF tried to lower those hurdles and serve as a platform which could be participated in without special skills.



Figure 8. An example of a photograph with a message board from Indian students after the Earthquake



Figure 9. An example of a video message uploaded from United States after the Earthquake

2.2 Designing Interface

After the concept of photographic messages was fixed, a user interface to share the messages was designed.

2.2.1. Visualizing the Connection on a World Map

The interface should work intuitively without text, and also be interactive to relay recipients' response. Since the aim of this service was to share empathy between widely separated people, a website that could be viewed from a web browser on personal computers was chosen as the platform. Access from mobile devices was also considered, but due to time and technical limitations it was decided to stay on a design for a bigger screen view.

The main idea of the interface is that photograph messages are uploaded to the website and mapped onto a world map. When someone from Japan clicks on an uploaded photo, the location points of the viewer and the photograph (in other words the location of the sender) are connected with a line. This would provide visual confirmation that the support message has reached someone in Japan (Figure 10).

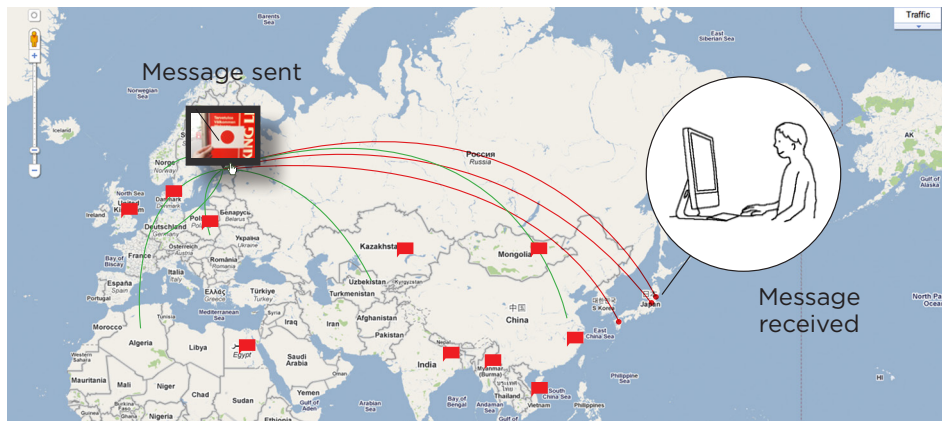


Figure 10. First concept sketch of the JSF website interface

A world map was chosen as the main graphical element of the interface since it instantly communicates the idea that the messages are coming from all over the world. The location information is part of the message and intuitively conveys that the world is supporting.

2.2.2. Reciprocity

After the Earthquake, countless messages for encouragement were sent via Internet, typically through social media such as Facebook and Twitter. However, there was no structure to display if the messages had reached someone or to express gratitude to the messages sent other than replying back to them by writing in English. The function of connecting two locations is introduced to bring reciprocity in sharing of the message. For the sender of the message, it graphically shows that the message he or she sent has reached someone in Japan. This will be an important feedback to engage people more emotionally to the event. For the recipient, the line depicts the fact 'I have read this message' which unobtrusively expresses their appreciation to each individual person who sent the message. The line tying the two locations is the lingering trace of communication between each individual who live in faraway places and have no social connection. Moreover this reciprocal communication is brought up as a result of a single click which is an intuitive interaction of viewing photographs by the user. My intention was to design a system which required no additional effort to gain emotional interaction for both sender and the recipient.

2.2.3. Promoting Grass-Roots Solidarity

The growing number of lines displays the promoted grassroots solidarity over time not only between people from Japan and rest of the world but also between people living outside of Japan. The interface is designed that a line is drawn not just between the Japanese recipients and the sender but between all senders and message recipients among the world. This was intended to provide encouragement to Japanese people living abroad including myself. Although the disaster was not

experienced directly, the event caused a huge shock and I was stuck in front of the Internet reading the latest news from Japanese media and also the international media.

At the beginning, the tone of coverage from foreign media was applauding the endurance and cooperative attitude of Japanese people in the severe condition (Kristof, 2011; Randall, 2011). However after four days, in response to the nuclear disaster in Fukushima nuclear power plant, the media had shifted from praise to fear. The international media report became more hysteric and sensational compared to Japanese media, for example on March 16th CNN reported 'After disasters comes the exodus from Tokyo' (2011) which was not the real state of Japan at that time (Kato, 2011). Journalist Wall of Shame⁶, a wiki site established by foreign expatriates residing in Japan which points out 'bad' journalism, cites more than 70 articles which were tainted by sensationalism. Not just tabloids but those regarded as more credible sources such as CNN and Reuter are pointed out for their inflation of fear. As Kato states (2011), the language barrier and being unfamiliar with the typical style of coverage response of Japanese government and corporation was one of the reason for this panic of the international media. In any case, radiation panic spread internationally and some people in US bought up potassium iodide to prevent radiation illness from exposure. A Japanese restaurant in Germany experienced a 70% reduction in sales although everything was imported from areas far west of the nuclear power plant. A Japanese friend of mine who planned to visit Paris was afraid whether her friend would accept her souvenir. The negative messages concerning Japan and the Japanese people propagated over the news was discouraging. A way was sought to spread a more positive message to counter the negative publicity about the situation of Japan by extending the warm wishes and grassroots solidarity from around the world.

6 <http://www.jpquake.info/home>

3 PRODUCTION

This Chapter outlines the details of the production process of Japan Support Flags website which consists of three steps with feedback from each step used for the next iteration. Three steps consists of: first mock-up, full prototype and second iteration (completed website). The more detailed interaction design and technological aspects of the website will also be specified. Furthermore, two exhibition works which were carried out as a part of the project will be described.

3.1 Design Development Model

The design process followed a three-stage model from first Mock-up through full prototype to 2nd iteration (the completed website). This kind of quick iterative model was more suitable for developing JSF than static waterfall model because user feedback could be obtained at each stage and used for improvements in the next stage.

3.2 Project Work Group

I was responsible for the concept, visual design, user Interface (UI) design, and some parts of the front-end programming. I designed a vision of how it should look and behave based on my studies as an user experience designer. Collaborators were then sought to implement the design. Below is the list of people who are involved in this project. Three people listed below from Aalto University collaborated with me to realize the concept design.

Japan Support Flags Production Team

Concept and User Experience (including Graphic and User Interface design):

Satoko Hinomizu (Aalto University School of Arts, Design and Architecture, Department of Media, Media Lab)

Back-end and Front-end Programming (Mock-up & Prototype):

Aapo Rista (Arki Research Group in Aalto University School of Arts, Design and Architecture Helsinki)

Front-end Programming (Completed website):

Andreas Lindroos (Aalto University School of Science, Department of Computer Science and Engineering)

Yota Ishida (Kanazawa University Graduate School of Natural Science & Technology, Aalto University School of Science, Department of Computer Science and Engineering)

3.3 First Mock-up

As the first step of implementation, first mock-up was made and the concept of Japan Support Flags was presented to the community at Media Lab Helsinki (presented at Media lab's Demo Day on 26 May 2011 at Aalto University School of Arts, Design and Architecture). It has the function of uploading image, identifies

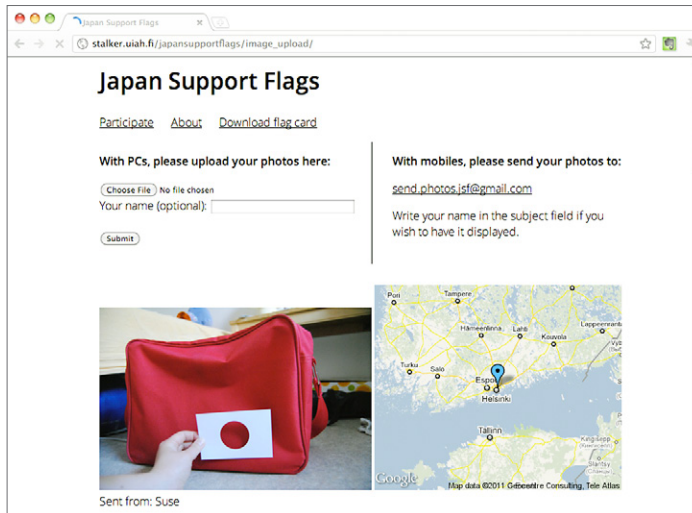


Figure 11.
First mock-up

the location data of the sender and marks it on a map (Figure 11). However the function of connecting two locations with a line was not available yet.

3.3.1. Technical Features

Two most important technical features such as uploading photographs and identifying the geolocation were examined and tested at this first mock-up. Two routes are available for the uploading process; from PC and from mobile. Uploading images from a PC using the upload form is simple and obvious but smartphones cannot upload images using the 'upload image' form feature and requires an alternative solution. The solution for the mobile upload is to send the photograph as an email attachment and retrieve image with a script from the server side. A new account send.photos.jsf@gmail.com was created for sending photos.

Next, the uploaded photograph needed to have its location identified. The conditions on identifying geolocation data of the photo are defined as follows:

1. The location is identified by a geotag retained in the photo.
2. If 1 is not available the location will be identified by the browser's current geolocation.
3. If 1 and 2 are not available the location will be identified by the sender's IP address.

At this point a decision was made on the project title as 'Japan Support Flags'. Firstly, because of the necessity to present the project to the public and secondly, to obtain a URL for the website. The title is more straightforward than poetic since I wanted it to be self explanatory and easy to search.

200 sheets of the flag card were made and handed out at the presentation. The flag card was printed with the URL of the temporary website and short instructions for taking and uploading the photos. The size of the card was 128 x 85mm, with a 50mm diameter circle hole made with a puncher (Figure 12).



Figure 12. Flag card

3.3.2. Feedback on the Concept and First Mock-up

The concept was presented, flag cards were distributed and the people were asked to take photos of any red object and upload the photos to the site (Figure 13, 14). It was two and half months after the Earthquake and everyone understood what the project was about immediately. People's reaction was very positive and the concept of taking a photograph with the flag card was understood very easily. The feedback was generally positive and many liked the simplicity of the concept.



Figure 13.
People participating in the project at
Media Lab Demo Day

Figure 14. on right:
Uploading photograph at
Media Lab Demo Day



38 photos were sent to the website in 5 days. All of them used the flag card I had provided and had a red object behind which created the image of a Japanese Flag. It was apparent that the concept was well understood. All photographs had different red objects and backgrounds, exhibiting the different personality of each sender. People were very creative with the photographs. One person took a photograph with a whole tomato fit in the flag card. My mother just loved the photograph and kept seeing it over and over again. Some people placed the card on top of the object and didn't hold it by hand, which was not initially intended as a way to use the card. They all had a warm feeling, which made reviewing the photographs a pleasant experience.

The geolocation identification feature worked well and showed the photograph's uploaded location from around Helsinki. Some people took photos at the campus site and uploaded photos immediately from the machine placed at Demo space. Other people took the flag card home and uploaded the photo from their homes or other places.

Two challenges were identified. One is that the quality of the photographs cannot be controlled. For example, some images were too dark to recognize the red colour well. More difficult was the case of the photograph which had a red plastic lizard coming out from the flag card. There was a slight worry that it could look as the lizard is breaking the Japanese flag and some people might be offended. Some people had no problem with it and thought it to be creative. However, other people said that although they understood that it came from a creative mind, they felt queasy about the lizard figure and its texture. The lizard figure was taken out, with some remorse for judging the sent message as negative. Since it is visual, there is the difficulty that the true intention of the sender cannot be ascertained. Another challenge was the extreme difficulty in engaging people to upload the photographs. Although the initial 200 flag cards were almost all gone, only 38 photographs had been uploaded.

The first mock-up demonstrated that the concept of Japan Support Flags would be positively accepted by an international audience. The temporary website had

successfully gathered the photograph messages which demonstrated the power of visual media to express empathy towards victims of the Earthquake and tsunami without textual information. However the site was not yet completed to show the full concept of the project. Efforts were continued to develop the full prototype site. All further improvements were based on the comments and reactions of the people to the first mock-up.

3.4 Full Prototype

From the first mock-up, which had limited features implemented, the process continued to build a full prototype that had full function of the design concept. First, a more detailed sketch of the user interface including all visual elements and layout, interactivity and dynamic movement was made. Those sketches were used to communicate the ideas to the developer (back-end programmer). For the full prototype, the developer built the database and created the back-end structure for the intended interaction to happen while the front-end programming is done by myself to build visual interface. The full prototype was launched on 22nd June 2011, one month after the launch of the test mock-up site.

3.4.1. Designing Details of the Interface and Interaction

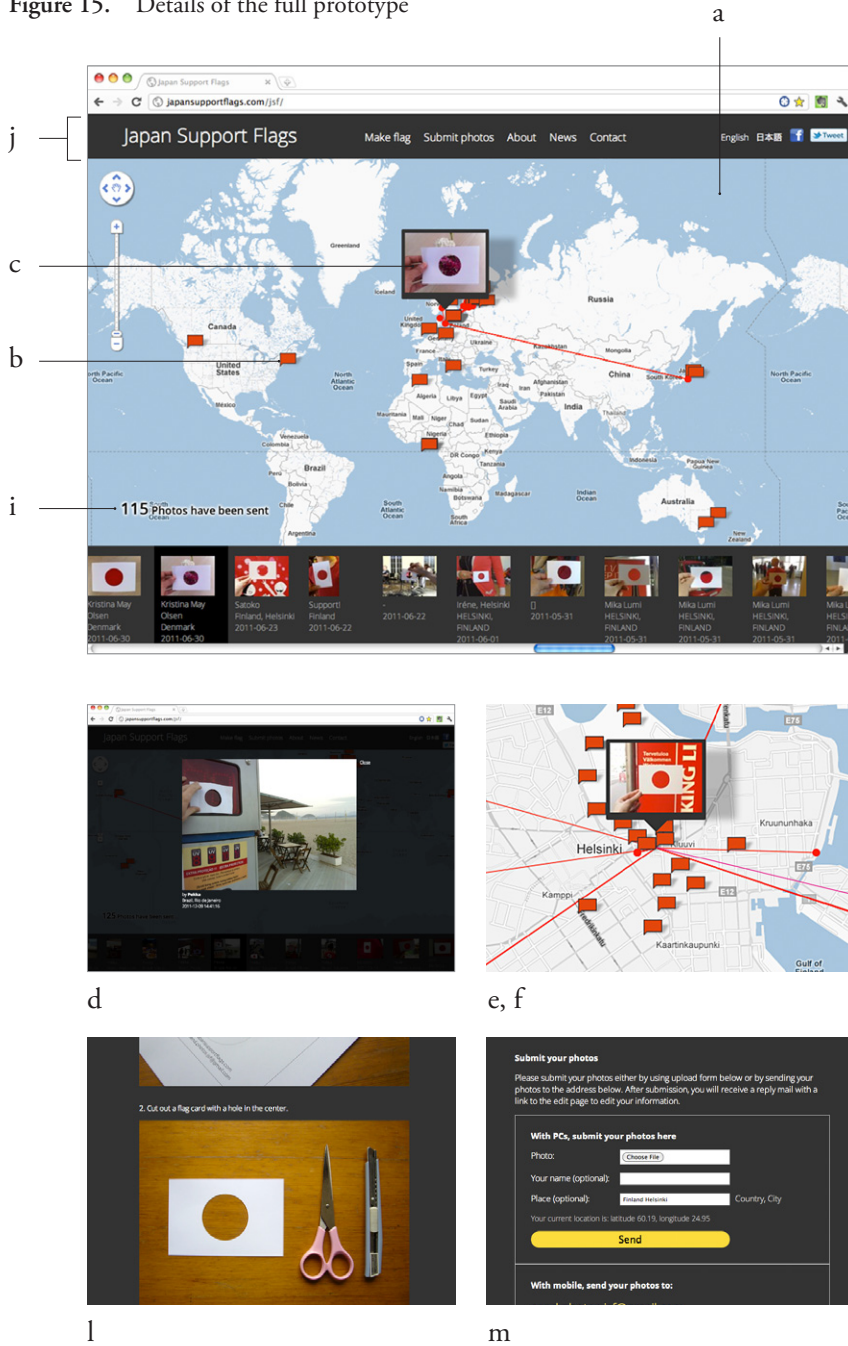
The structure of a front page interface consists of a world map, thumbnail list of the photographs at the bottom, and a global navigation interface which gives links to a site's top-level categories that occur on every page of the site (Adkisson, 2005).

Design details of the interface and interaction are listed below (Figure 15).

Front Page

- a. Google Maps is chosen as a mapping service to be used for the JSF interface. Colour is simplified as light blue for the ocean and all other elements in

Figure 15. Details of the full prototype



different gray tone colours. This is selected to provide good contrast with the red colour of the photograph, flag icons and connected lines. A more detailed discussion regarding mapping services will be presented later.

- b. The uploaded photographs appear as a red graphical flag icon on the map at the location from where it is uploaded. A more detailed discussion regarding identifying the geolocation will follow later.
- c. Mouse over on flag icon opens the pop up window to display the photograph and also highlights the same photograph on the bottom thumbnail list. Same interaction happens on the other way around, mouse over on the photograph on thumbnail list will point the corresponding flag icon and centres it in the browser. The intention is to find the chosen photograph easily at any zoom level of the map.
- d. Clicking on the photograph thumbnail opens new layer on top of the map and displays the photograph in larger format (lightbox display). Name of the sender, location, and date of upload is mentioned together. The lightbox is designed in dark gray with opacity to provide good background for the photograph and also to bring the context of the message being sent from the world.
- e. All past lines are in red colour; newly drawn line is in pink colour. The pink line turns into a red line when the page reloads.
- f. Mouse over on a flag icon shows the connecting line on that photograph and hides other lines.
- g. Originally the line was designed as a curved line, which took inspiration from the airplane flight visualizations. The convention of the flight visualization was expected to support the idea of a message being delivered over long distances like air mail. However, drawing curved lines turned be quite challenging technically and the extra calculations made the site too sluggish. Since this feature is not a first priority, it was decided to make the lines straight.

- h. Thumbnail list at the bottom presents the sender's name and location under each photograph as textual information. However these are sub elements to support better understanding of the photograph message. These are not necessary to understand the messages thanks to the intuitive map interface.
- i. Number of the sent photographs are counted.
- j. Global navigation
 - Website title with a link to the homepage
 - 5 category links to sub pages such as Make flag, Submit photos, About, News and Contact
 - Language menu (English and Japanese)
 - Link for Facebook and Twitter
- k. The site is originally created in English and Japanese translation page is made with a software program called Rosetta.

Sub Pages

- l. Make Flag page provides the step-by-step instruction of how to make the flag card and take photograph message. PDF template of the flag card is available to download.
- m. Submit Photos page provides upload form for the upload from PCs and email address for sending photograph through mobile. Name is optional. Place field displays sender's current location latitude and longitude. The name of the country and city are detected from location data however they are also optional so the senders could edit the information themselves. In the end it explains the conditions identifying geolocation data and privacy issue.
- n. About page explains briefly about the Tohoku Earthquake and objective of the site. The English section asks the visitor to participate by uploading

photographs while the Japanese page places more emphasis on the messages being sent from the world.

- o. News page is made to display related news for JSF project, for example announcing the opening of the installation.

3.4.2. Identifying Geolocation Data

Geolocation is the process or technique of identifying the geographical location of a person or device by means of digital information processed via the Internet (Oxford University Press, 2012). Common sources of location information include Global Positioning System (GPS) and location inferred from network signals such as IP address, RFID, WiFi and Bluetooth MAC addresses, and GSM/CDMA cell IDs, as well as user input. (W3C, 2012). JSF website uses geolocation data to place the uploaded photograph on the world map, detect the viewer's location and connect two locations.

As mentioned in 3.3.1, the process of identifying the geolocation of the uploaded photograph is as follows. The process for identifying the location of the viewer is the same but without step 1.

1. The location of the sender is identified by a geotag retained in the photo. Technologies used are A-GPS (assisted GPS), Wifi and cell tower triangulation.
2. If 1 is not available the location will be identified by the browser's current geolocation.
3. If 1 and 2 are not available the location will be identified by the sender's IP address.

Other Conditions

- Identified location data were given random variable within 1km radius

to maintain both the sender's and viewer's privacy. Which means that the location point will be different within 1km radius each time although your real position is the same.

- If the location data is not given or unavailable, default will be mapped to coordinate 0,0 (off the west coast of Africa).
- The location of the photograph can be edited manually from the edit page later (within 24 hours). An 'Edit' link appears under the photograph for the person who uploaded that photograph. If the photograph is sent by email, the sender will receive email which has a link to the edit page. The editor can manually edit the location of the photograph by clicking the map on the page and is also able to edit personal information.

3.4.3. Technological Settings

The back-end programming of Japan Support Flags (JSF) website depends on many Open Source applications and libraries, which are listed below. Current JSF server is minimal Linode 512 virtual server running Ubuntu 11.04 operating system, and it uses software listed below to run JSF website.

Operating System: Ubuntu Linux 12.04

Programming Language: Python 2.7.1⁷

Database system: PostgreSQL 8.4 or 9.x and PostGIS 1.5 (MySQL for mock-up)

Web application framework: Django 1.3

Web server software: Apache2 2.2

Others: mod-wsgi 3.3, some additional Python libraries (e.g. PIL, GeoIP)

7 <http://python.org/download/>

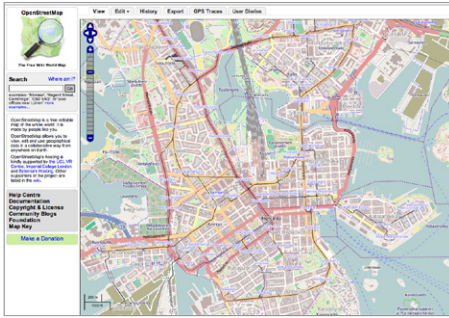


Figure 16. Open Street Map

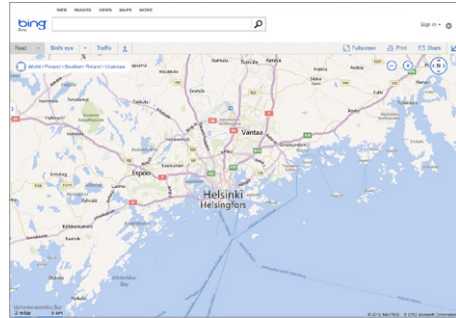


Figure 17. Bing Maps

3.4.4. Google Maps API Platform and Other Maps

The World map is one of the most important elements of the JSF website interface and use of existing mapping service was required since such data is much too complicated to be developed in isolation. Three mapping services, Google maps, Bing maps and Open street map were compared with the assistance of the developers (Figure 16, 17). According to the developers, Bing map with Silverlight plugin could be faster in loading connecting lines and animation compared to Google Maps, which uses Javascript. However shortage of documentation complicated further development. It was the same with Open Street Maps.

Google Maps was chosen to be the platform. The reason is that it has the best development platform in regards of numbers of API (application programming interface) and rich documentation allowing ease of development and rapid progress. There was an additional advantage in the ease of customizing colour with Google's Styled Map Wizard without coding⁸.

In October 2011 after the full prototype site had been launched, Google announced new usage limit policy for using Google maps API. It was notified that excess map loads of 25,000 per day would be charged for cost (0.50\$ for 1,000

8 <http://gmaps-samples-v3.googlecode.com/svn/trunk/styledmaps/wizard/index.html>

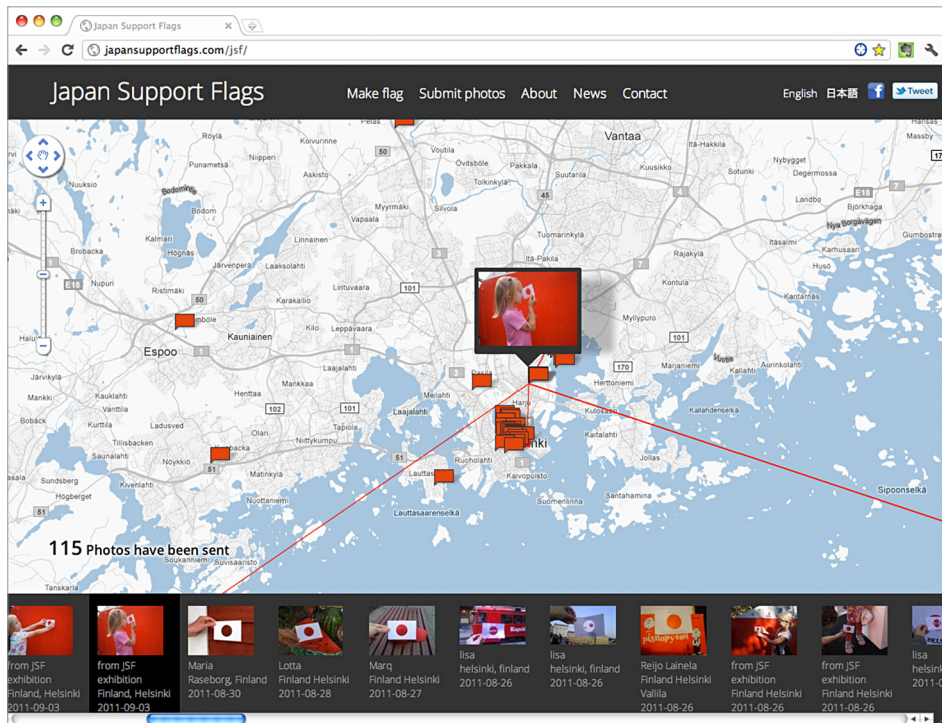


Figure 18.
Full prototype

excess map loads). However because the visitor number at the website was below that limit, usage of Google Maps API was continued during the second iteration phase ('FAQ - Google Maps API — Google Developers,' 2012).

The full prototype (Figure 18) was launched on 22 June 2011 which was one month after presenting the mock-up site and approximately three months after the Earthquake. The site is introduced to international audience and also to the Japanese audience. Feedback will be discussed next.

3.5 Feedback & Analysis of The Full Prototype

This section discusses the feedback and analysis on the full prototype. Firstly, the site was introduced to Japanese audience in July 2011. They were all residents of Tokyo and nearby cities which means they had experienced the Earthquake but were not from the severely damaged area of northern Japan. Age was from late 20s to 60s, around 25 people in total. Secondly, from August 2011 the site was introduced to international audience, mainly to the community of Media Lab and other Aalto University students. In addition on August 2011, Japan Support Flags was chosen to be exhibited as a part of the Kuori project, a public installation in Hauhonpuisto Helsinki and feedback from a wider audience was collected. More about the art installation project will be discussed at the end of this chapter.

3.5.1. The Main Target Audience

The biggest founding concerned who was the target audience of this site. The reaction of the Japanese audience was quite different from that of the international audience, which was not initially expected.

Originally three audience groups were targeted.

Group 1: Victims of the disaster (this equals to everyone living in Japan since

they are all somehow affected by the disaster)

Group 2: Japanese people living abroad

Group 3: People from the rest of the world

The primary audience was to be victims of the disaster (Group 1). However, after showing the prototype to people in Tokyo in July, it was realized that main target audience might not be the people from group 1. The initial reaction of most people from around Tokyo was ‘Okay, let’s take a photograph and send it to the people in Tohoku area, who are still suffering from the disaster’. They didn’t feel that the message was for them. This was because their lives had already returned to normal and they no longer thought themselves to be victims of the disaster. Furthermore, messages of moral support were not what they thought to be most relevant at that point. These people had seen the difficult situation of the most severely affected victims in Tohoku area through media and felt it necessary to provide more concrete support: i.e. financial help or volunteer work. That was the ‘atmosphere’ in Japan at that moment, four months after the Earthquake and tsunami. Moreover, the relationship between Japan and the rest of the world is not a daily concern. There are not many chances to meet foreigners in Japan compared to European countries, for example. Mainstream media in Japan do not report much about how Japan is seen from abroad and the average Japanese is not normally concerned with foreign attitudes to Japan. This makes it hard to feel what the message from abroad actually means to them.

On the contrary, people who have some contact with abroad such as those who have studied, travelled, and lived outside Japan are more conscious about the relationship between Japan and the rest of the world. One Japanese woman in her 30s revealed her honest feelings when she visited her friend in France after the Earthquake. She had bought green tea as a souvenir, but then she got worried that her friend might have a sensitive reaction to any food from Japan due to the radiation leak at the Fukushima Daiichi nuclear power plant. There had been reports of avoidance of things, particularly foodstuff from affected areas in Japan and she was worried of

similar reactions and inconveniencing her friend. In the end, her worry proved to be unfounded. People of France either expressed their sympathy or just acted normally. Japan Support Flags appealed more to people like her who are conscious of the general perception of Japan in foreign countries which was not being reported much by media even a few months after the Earthquake. From these feedbacks, the main target audience of the JSF project could now be described as people who belong in group 2, but include not only those who live outside Japan but also those residing in Japan but are concerned about the relationship between Japan and the world.

The project was more easily understood by the international audience. The feedback from the people who visited the Kuori exhibition site was very positive and people started to take the photographs with flag card immediately. People were strongly reminded about the Earthquake event and asked about the condition in Japan 5 months after the disaster, expressing their condolences. People appreciated the simplicity of the concept and the ease in participating. It can be said that JSF website worked as the perfect device to express the feelings of people which had existed but not been previously apparent. Group 3, the people from the rest of the world is definitely another target audience.

Additionally, it became clear that literacy in digital communication is required to understand the project. For elderly people who lacked sufficient digital literacy, the concept of JSF was not convincing because the operation over Internet felt too difficult. Moreover, when people do not have access to the Internet, this project will not reach them in the first place. This is a major limiting factor for the audience of the JSF website, especially concerning the elderly victims in Tohoku area.

3.5.2. Feedback on the Interface Design

The overall concept of the project and the interaction of the website interface was generally well accepted by the audience. However, there were many feedbacks that asked for further improvement.

Meaning of the Red Line

One of the most repeated feedbacks was that many people did not understand what the 'red line' stood for. The concept of the site and details of the interaction such as message sender and receiver are connected by line were not explained on the front page and made the user wonder. Another challenge in the design of the connecting line was the difficulty in differentiating the past drawn lines and the line just drawn. This meant that it was difficult for the user to feel that the act of viewing the photograph had created the line and connected him and the sender of the message. There was not enough feeling of being connected. There was also a comment that it might be too strong to describe what is happening here as 'communication' between the two because the viewer only clicked the photograph because they were curious. In the design concept it had been planned that the red line would represent reciprocal communication, the sending of the original supporting message and the message of 'Thank you' from the viewer in return. However, the feedback was that the red line is more likely to be understood to represent that the photograph is viewed and not as the message from the message receiver. However, it does provide the information that 'your message has reached someone at a certain location' which works as a feedback for the sender of the photograph message.

Some people commented that to make this site truly 'interactive', more communication should be created. At the moment the user is aware of what happens (you can browse and click the photographs), but it doesn't create further interest. In fact, many ideas for expanding the project were considered before the feedback, for example to add information about radiation level of places, show the webcam view from a point near the viewer's location, or to let the viewer send another photograph as a reply. The intention was to increase the viewer's individuality by showing their surroundings. However it was decided not to include further features since it would make the project more complicated. Also it was not the intention of this project to make the audience feel forced to do something back. The communication here is much more subtle. With the spontaneous and effortless response to the sent messages by clicking to view the photographs, it aims to deliver the feeling of gratefulness

from the viewer. This brings back the issue of the meaning of the red line discussed above. The design improvement for this issue will be discussed in the next chapter.

Unclear Context of the Project

It is mentioned that the context of the catastrophe was not active in this prototype website. Since the story of the disaster is not clearly communicated on the front page of the website, the site could seem to be about just saying hi to Japan. The context was only available by verbal explanation (if in face to face situation) or from 'about' section if the user reads it, which needed to be improved.

Fund Raising or Long-Term Connection

Other people mentioned their concern whether the implied moral support means as much as real support and suggested to combine the project with fund raising. This also fitted with the larger objective of the project, which is to provide clear support to the people suffering from the disaster. Accordingly, the ideas were given further consideration. One idea was to instate a sponsored challenge to gather, for example, 1,000,000 photographs. If the goal was met, some money would be donated by the sponsor. Another idea was to publish a book or make postcards with sent photographs and raise money from their sales. There are three good reasons for combining fund raising. Firstly, it is clear that the victims would appreciate financial support. Secondly, it will provide stronger incentive to participate. Thirdly, the concept of the project will be understood more easily since showing a will of support by donation is simpler. However, it was decided not to have a fund raising feature. The reason is that the project aims to deliver supporting messages for a long time span. If the site were to undertake a mission to raise funds, it could only be active for a limited time and as time passed, the reason for the site to exist would cease. Instead, the project aims to collect and remember all the condolences and to show the growing grassroots connections.

Ease of Participation Versus Gravitas of the Message

There were discussions on providing digital versions of the flag card to replace the paper cutout. Of the 108 photographs uploaded to the site during the mock up and prototype presentation stage, photos using flag cards prepared by the sender himself were only 4 in number. Almost all others used the flag cards that were handed out. Although many people took a flag card with them, there was a significant barrier to taking photographs and uploading to the site. The process of printing the template, cutting the hole, taking photos and uploading did not seem difficult at the outset, but actually presented a high hurdle for entry. If a digital flag frame had been distributed for mobiles, this hurdle would have been lowered considerably and a much larger audience was thought to have been possible. However, the photographs taken with a digital frame tended to be homogenized compared with those taken by the physical flag card. Photos with the same flag size, flat and without depth resulted and the important 'slice of life' element of photos using the cutout was missing. It was also realized that the price of ease of entry would be a loss in the 'gravitas' of each message. The process of cutting the paper, taking the photographs and uploading to the site entailed thinking about Japan during the procedures. The time required was in itself a silent prayer that had meaning. The physical cutout was important to the message. Utmost care was taken to balance the objective of ease of participation compared with verbal communications and superficiality of the message.

3.5.3. First Exhibition

From 24-26 August 2011, JSF project was invited to participate in the group exhibition at Kuori in Helsinki Finland, a temporary refugee shelter turned into an art gallery and a platform for artistic events. JSF was designed as a project to run as a website, but the exhibit provided the opportunity to expand the concept as a site specific installation (Figure 19, 20, 21). Since the site was located outdoors and had no electricity, it was decided to reproduce the project website in physical form instead of displaying it on a screen. The main exhibit was a white textile sheet with

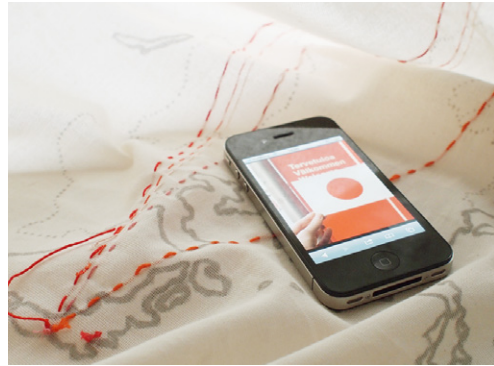


Figure 19.
Exhibits from the first exhibition

a hand drawn world map which was hung from the ceiling. On the textile red beads which represented the uploaded flag images were attached and the connection red lines were hand stitched to replace the connection lines on the website. Another exhibit was the actual flag photos displayed on a smart phone. The audience was instructed to turn on/off the mobile to view the photos. It would run until the mobile's battery died. The aim was to convey the desperate need for electricity and the actual situation of the victims where mobiles were the only device to connect to the outside world. After the Earthquake, people sent messages to their families and collected information to survive through network connection via mobile even during power blackout. It was the only light in the darkness. The dilemma was whether to keep it on or off, since you never wanted to be isolated but the more the phone was kept on the earlier the battery died. Lastly, flag cards were distributed to the visitors to ask for participation and to promote visits to the prototype site.

One of the challenges was to figure out the viewer's location, symbolized by the end of the red line. This was due to the interface design of the prototype site. When zoomed out to see the whole picture of connection lines on the map, the flag icons which represents the uploaded photographs are overlapped on top of each other in congested areas and it was impossible to mouse over on individual photographs to figure out the connection lines respectively. When zoomed in to discern between individual photographs, the destinations of the lines were not seen. For the stitching, since there were not many 'viewed' locations on the prototype at that time, a rough



Figure 20.
Exhibits inside the temporary shelter

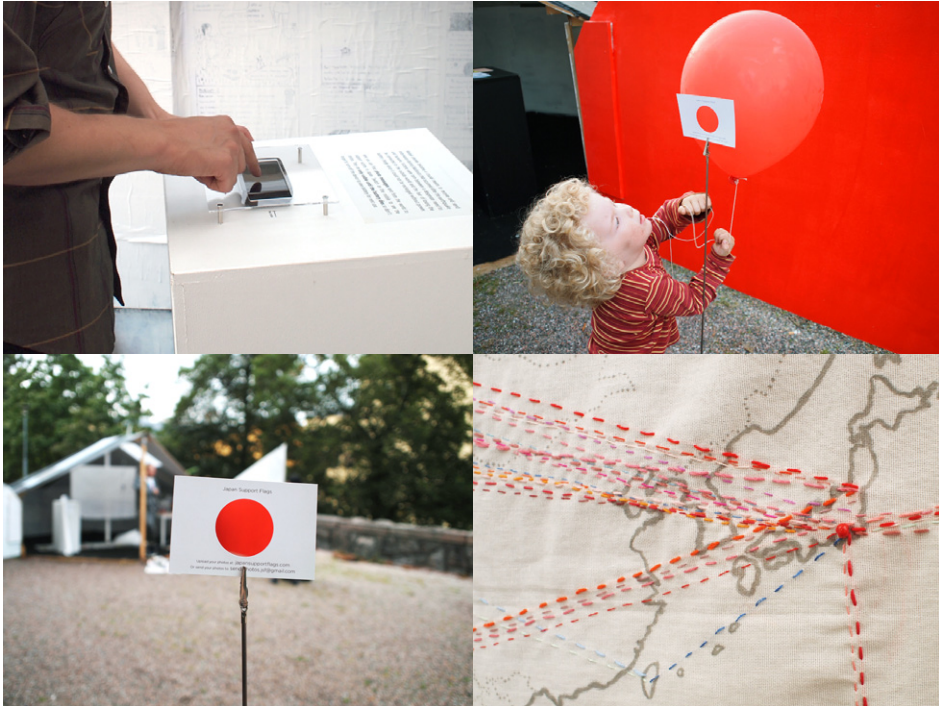


Figure 21.

Clockwise from top left: Browsing flag photographs on a smart phone, A child attempting to fill the hole on the flag card with his red balloon, The exhibition site, Detail of the exhibit

idea of the viewer's location was enough but it revealed an issue that needed be improved in the interface design. Building a furniture base was another challenge, especially a structure to display the smartphone that allowed freedom to touch and at the same time to lock it securely.

The exhibition site was featured as a part of the Night of Arts festival by Helsingin Sanomat, the largest subscription newspaper in Finland. The main audience was citizens from Helsinki, from small children to elderly people who found the site by chance on their daily walk. The hand stitched map gathered attention and people operated the smart phone to view flag photographs. Since I was present at the site to introduce the project, it was easy for the audience to understand what those artifacts meant. The concept of taking a photograph with the flag card was easily understood and everyone took a flag card home. Kids enjoyed playing around with the flag card, although they were not aware of the meaning of the card. People were reminded of the Earthquake right away and expressed their sympathy for Japan directly to me. They asked how the things were going in Japan, mentioning that there had been no further media reports in Finland. It was clear that the main concern of the Helsinki was 'Fukushima' and its related memory with Chernobyl. Few people mentioned the damaged area and victims of Earthquake and tsunami.

15 photographs were uploaded during the 3 days of the exhibition, of which 5 photographs were taken by myself at the site capturing children with a flag card.

3.5.4. Wrap Up of the Full Prototype

The full prototype revealed the different mind-set of the Japanese and the international audience and made clear that the level of the relationship of the individual viewer with foreign countries led to different approaches to the project. It also clarified the concept of Japan Support Flags. Seen from the outside, it was imagined that if you sent a message to Japan, it would reach the 'victims'. In other words, messages are sent to the conceptual group of 'victims', not to the individual person. Instead of sending messages to the 'victims', JSF website enables

communication at a more personal level. To be more precise, at the point when the message is uploaded, it is still the message sent to the bigger group of people. However, when the photograph is viewed by someone, the sender of the message realizes that 'someone' has specifically received the wish he tried to deliver. However, it is also true that Japan as a whole could be seen as a 'victim', since everywhere in Japan was affected by the disaster in one way or another and everyone is part of the long recovery process to some extent. The JSF would still work to encourage all Japanese people by delivering the messages and also by the fact that they are shared and the event is remembered with people from all over the world.

It has also been proven that JSF works as a robust vehicle for the people from abroad to show their sympathy towards Japan. The visual quality of the messages could also be flexibly understood according to the state of mind of both the sender and the recipient. This proved the viability of the initial concept of visual communication, which avoided the difficulties inherent in translation of verbal messages.

Composing a unique verbal message is difficult and it must also be translated into a language understood by the reader. Each photograph may seem simpler on the surface, but has an inherent uniqueness and the flexibility to allow for varied and deeper interpretations.

The exhibition presented a challenge in reproducing a two dimensional screen work as a physical object. It succeeded in introducing the project to a different audience who were not an acquaintance of me, and also a wide range of people from small children to elderly people. The project was well accepted, however the number of uploaded photographs were not very big. It revealed the necessity to improve the interface design to show overlapped icons on the map and how to display where the viewer was from.

Wrapping up, the feedback provided a clarification of the concept, but also raised issues concerning interface design, such as the red line and how the context of disaster should be told. Next chapter will discuss the second iteration, which took these feedbacks into consideration.

3.6 Second Iteration—Completed Website

The Second iteration was made as the next step to improve the site. The aim was to launch the completed website by 2012 March 11, on the one year memorial of the Earthquake. The prototype had proven the viability of the major functions of the site. Therefore, no major changes to the back-end programming were required. All changes were within the scope of front-end programming, which was to adjust the details of the interface. New sketches were made by myself to examine how to improve the interface design in answer to the feedback and other issues found after further observation. At this point Andreas and Yota joined the team as the front-end developer. An attempt was made to implement every single detail of the final sketch. Whenever technical challenges arose, discussions were made to come up with a reasonable compromise, as is normal for the process of design development.

3.6.1. Design Changes

Redesigning the Interaction of Red Connecting Line

The biggest challenge found by the prototype was the difficulty in distinguishing between the lines created before by others and the one created by the user himself. To improve this, two features were added to the interface design. First, animation is added to express the moment of being connected (Figure 22). The interaction is designed as follows:

1. The viewer clicks small photograph on the map.
2. The photograph shows up in full size.
3. Close the full size image to go back to the map views.
4. The animation of red dots starts from the location of the message and ends at the viewer's location (recipient of the message). Two locations were marked with pop up information bubble. The location of the viewer and the message (sender)

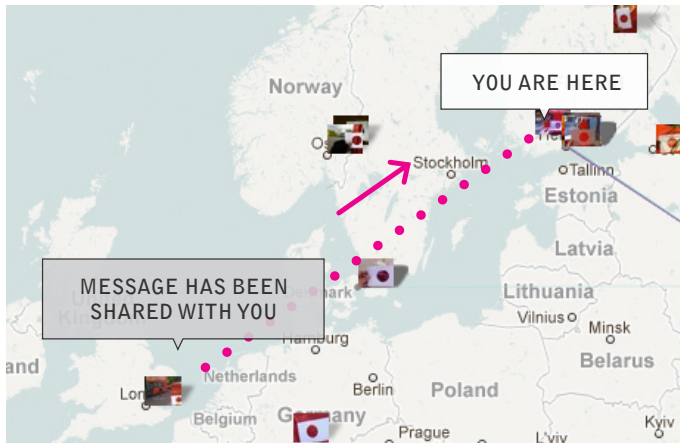
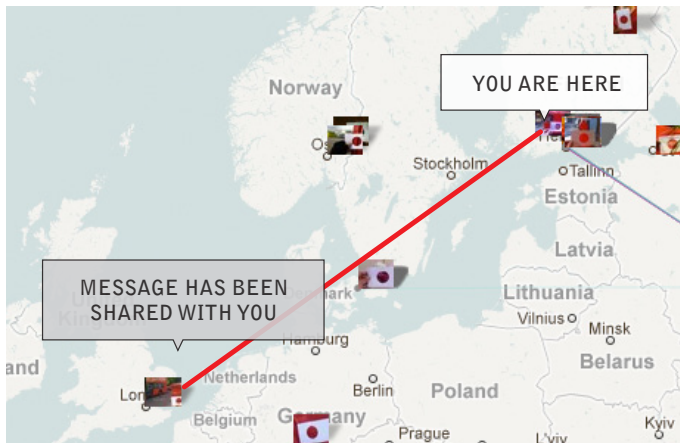
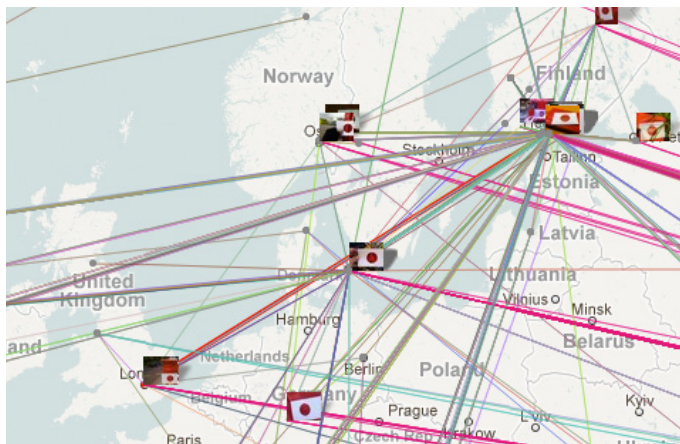


Figure 22. The animation of red dots

Starts from the photo message towards the recipient



Red line appears



After 2 seconds, all the lines drawn in the past come back

are marked as 'You are here', and 'Message has been shared with you' respectively.

5. After the red dot animation, a red line appears to connect the two locations as a trace of the animation. The red line remains as the only line on the map for 2 seconds and then lines drawn in the past comes back on the map. The red line is double the thickness of other lines and remains thick until the next line is drawn, or the page is reloaded.

The animation graphically narrates the story of message sender and recipient being connected. It also assured some time for the user to understand the process of the message being delivered to and being received by someone in another location. The length of dot animation (5 seconds) and time for displaying the red line (2 seconds) were examined carefully as long enough to read what the two popup signs say and to understand that the line is uniquely drawn by the user's input, but not too slow to get frustrated. The length of dot animation is always the same despite of the distance of the locations, which means dots move faster between Finland and Japan than between Finland and Denmark. Two alternative ways of the animation were examined. One was to animate a return trip from the location of the message. The intention was to depict the 'reciprocity' that the message has been received by someone and gratitude is delivered back. However it looked as if the message has been rejected and did not work as intended. The other idea was to have it start from the viewer's location, which means to emphasize that the message has been viewed (by the viewer). Finally however, it was decided to depict the interaction as 'message being shared' to emphasize that what happens here is more about relaying people's emotion and sympathy, not just that it was viewed. Secondly, legend is added at the bottom of the front page and three main elements such as 'photo message', 'message received in Japan' and 'other connections' were explained. This was the key to understanding what the lines meant.

Depicting the Context of Project Clearly

In order to convey a context of the Earthquake of 3/11 without reading a long text on another page, tagline 'Thinking of those affected by March 11' is added under the Title of the website. This explains what is happening with the photograph message to the users who are visiting the site for the first time. It also includes the idea of 'sharing thoughts' between the non-Japanese visitors. Other taglines were also explored such as 'Remembering March 11th and Connecting Compassion', 'Letting those affected by March 11 know that we're thinking of them', or 'A tapestry of thoughts for those affected by March 11' to display the idea of connecting or sharing. However since the idea of connection is understood clearly with the visual, it was decided to keep the tagline short and simple. In addition, the number of days since the Earthquake is displayed at the side which also helped to relate the website with the Earthquake.

Interactive Timeline

As a new feature, interactive timeline slider was added to display the growth of shared moments. The timeline has 2011.3.11 as the left end of the slider and the current day as the right end. The slider corresponds with the photographs on the map, which shows the uploaded photograph and connected lines at a certain time after the Earthquake. In an ideal case the slider display should be calibrated for single day units, but here each unit of the slider is approximately 4 -5 days. This was required because the length of the timeline is set while the days since the Earthquake keep increasing and a single day step of the slider would be constantly changing. An idea to introduce another feature to express time by making connecting lines fade out eventually was also explored. This would have added a more emotional factor to the site by depicting the fact that people's memory would fade over time. However, this proved too complicated and it was decided not to implement this feature.

In the design concept sketches, it was proposed that in addition to the number of days since the Earthquake and the number of uploaded photographs, the number of connecting lines would also be displayed. However this was rejected in the

implemented site.

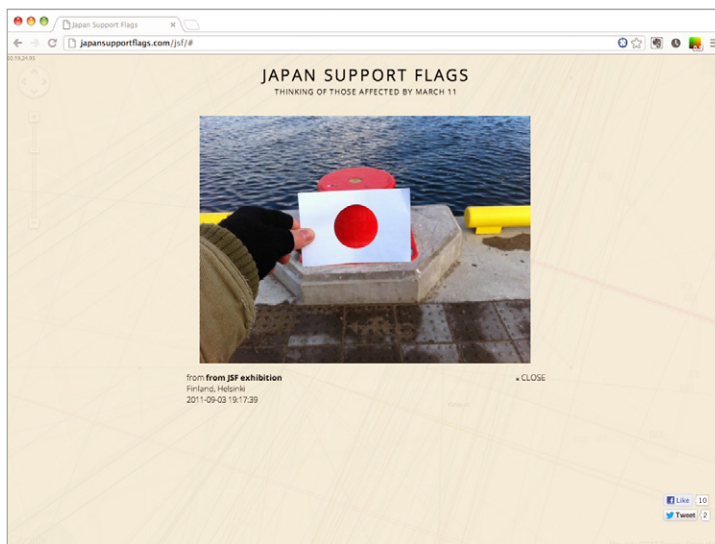
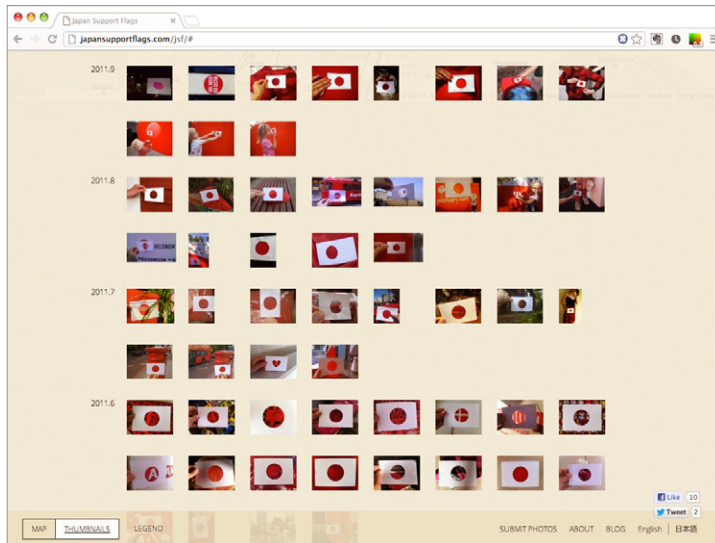
Firstly, there was no time information associated to the lines so it would not display the correct number when the slider moved. Appear/disappear of the lines are controlled by the time information associated to the photographs and dots which the lines are connected to. Iteration on the server side programming was abandoned because of the time limitation. Secondly, the counter display would become too long and cluttered if this number was included. Lastly, completely overlapped lines would appear to be one line and there would be a discrepancy between apparent lines and the displayed number. On the other hand, the visual would only communicate ‘many’ lines whereas the number could provide the information of ‘5000 connections made’. The visceral understanding derived from the numbers would have complemented the visual information greatly, and in retrospect, it is regretted that this display was deleted. It made me realize the importance of thorough planning of the details of user experience design.

Separate Thumbnail View

The prototype displayed the photograph messages twice on a front page: Once, as a thumbnail list at the bottom of the page and again as a pop-up by mouse over on the flag icon. They were too similar in size and too much space consuming. Also an overview of all the images could not be provided on one page. To improve this, the thumbnail view was given a separate page (Figure 23). On the map view, the flag icon was replaced with small photo images, which more intuitively conveys the idea of the photograph as the key element of the project. Full size image is available by clicking on the thumbnails (Figure 24). The animation of the red line will commence when the image is closed as described above.

Other Graphical Details

- Connections to Japan were coloured in pink and other connections in multiple colours with the intent to place emphasis on the primary objective of sending messages to Japan.



From above:

Figure 23. Thumbnail view of the website

Figure 24. Full size image view of the website

- Pink was chosen instead of red as a better match for the blue map.
- The multiple colours change randomly with every refresh of the page.
- A grey dot was added to clearly indicate the viewer's location.
- The Make Flag page was integrated into the Submit Photos page to combine flag making and uploading on one page. The making and uploading instructions were simplified and it was emphasized that any sheet of paper with a round cutout was OK without using the template. All these changes attempted to lower the threshold to uploading a message photo.
- Open Sans was chosen as the font from the Google web font list⁹. Using web fonts allows displaying text using font data from a font file on the web, whereas previously, only font files on the client PC could be displayed. All fonts provided for Google web fonts are open source and can be easily used by pasting the source code for Google font API. The ability to choose the most appropriate font from a wider selection rather being restricted to so-called web safe fonts, is extremely important for a designer.
- Japanese font used Hiragino Gothic Pro W3 from the Mac system fonts. It is a bright and easy to read font close to Open Sans in style. However, the font does not display as intended in Windows environment and the use of web fonts was preferred. Nevertheless, the problems stemming from Japanese fonts requiring a very large font file due to the large number of characters and other factors made it impossible to implement with a web font at this time.

9 <http://google.com/webfonts#AboutPlace:about>



Figure 25.
Clustering of the photographs

Controlling of Zoom Levels — Clustering of Photograph Icons

Another issue was control of the zooming level as discovered from the development of the exhibition. When it is zoomed out you cannot see all the pictures in a crowded area because they are overlapped, while zoomed in you cannot see the location of the viewer. To solve the problem of overlapping images, clustering function was implemented. The overlapped images are displayed in a popup infobubble so the images could be viewed even in the zoomed out map view (Figure 25). Maximum number of images that could be displayed in this way is 25. This number was decided considering the maximum limit of the size of the infobubble which will not cover the map too much. To solve the issue of identifying the viewer's location in zoomed in map, displaying the country name on the line was examined. However, when the line became overlapped by several views from nearby places (for example Japan), showing a country name on each line was too distracting. Another technical challenge arose for displaying the name in the aesthetically right spot. Since the view from Japan was identified by the colour pink (and others in multiple colours), it was decided not to implement this idea and keep the interface simple.

Clustering of Lines

The programmers noted a technical issue that when the site displayed a large number of photographs and lines, it would become 'heavy' and sluggish. For

example, in the interaction when a mouse-over of a photographs occurs the line for that particular photo only is displayed, but when the mouse is moved, all lines reappear, the lines are being redrawn each time. The number of lines was expected to increase and a lag in display of 1 to 2 seconds would be inevitable, but the actual delay could not be foreseen with any accuracy. In order to reduce the lag it was proposed to combine several adjacent lines into one thick line. Another idea was to display a number over a line, '10' for example, instead of ten separate lines. However, the connections symbolized by each line is central to the visual communication that was the objective of the JSF project. The final decision was to retain all lines in the display. It was intended that if the lag became to stressful for the viewers, it would then be changed, but as of this writing in September 2012 no significant problems have been observed.

Preparation of the Flag Card

The submit photos page was modified. In the prototype, a template was provided for downloading to simplify making the flag card for viewers, as previously explained. However, this also necessitated the need to print out and cut out the template. In the improved version, there are no limits on size and the viewer is simply instructed to cut out a round hole in any white sheet of paper available (Figure 26), although the template is still available for downloading.

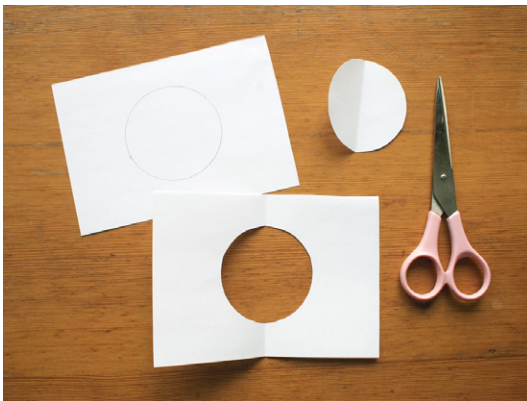


Figure 26.
Instruction image for
making a flag card

Acquire Permission for Use of Location Data

The JSF website relies on location data for its operation. Major browsers such as Firefox 4, Google Chrome 11, Opera 11, Safari (Mac OS 10.8) and IE 9 (Windows 7) allow this information by default. When the site requests the information, the browsers reports the approximate location or displays a permission dialogue box (Figure 27).

When the first page displays this kind of permission dialogue, many people automatically show a certain reluctance to proceed. This point was actually reported several times. It was decided to display the following information at the same time

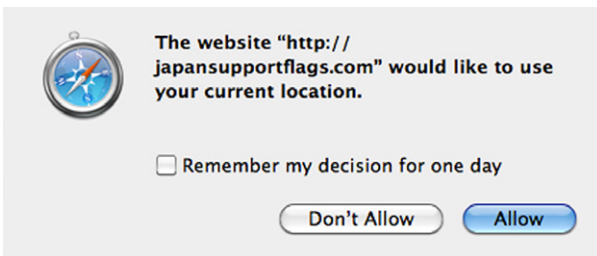


Figure 27. Permission dialogue box for Safari

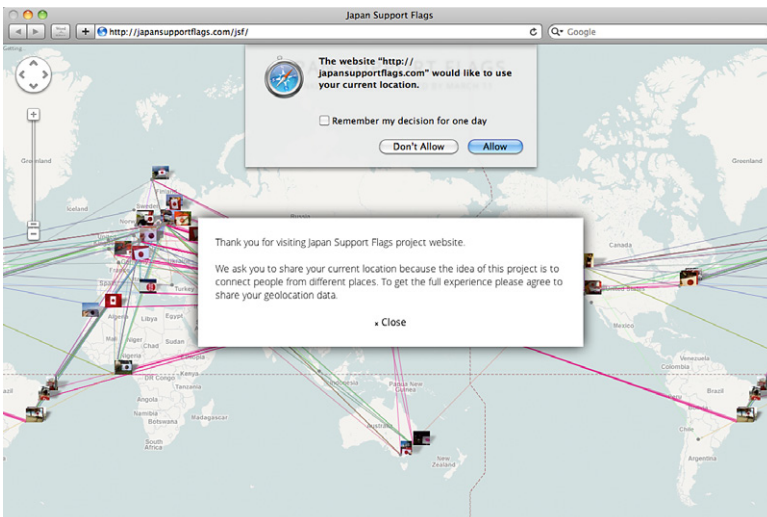


Figure 28. White dialogue box acquires for a permission to use location data. A gray permission dialogue box of Safari browser appears at the same time.

with the permission dialogue explaining the purpose for using location data in the JSF website (Figure 27).

‘Thank you for visiting Japan Support Flags project website. We ask you to share your current location because the idea of this project is to connect people from different places. To get the full experience, please agree to share your geolocation data.’

The inclusion of further information on privacy, such as ‘location will be randomized within an 1 kilometre radius’ was also considered, but the impressions of clutter and complications from the longer instructions was thought to be detrimental to the site and not implemented. A positive message implied in ‘to get a full experience’ was used instead.

The placement of breaks in sentences was also given careful attention. The English breaks are not as intrusive as in Japanese where breaks can occur in mid-word, due to the nature of the Japanese writing system. Sentences broken in awkward positions give a sloppy impression and reduce confidence in the site. This is a small detail, but attention to detail contributes directly to the user experience.

Adjusting Text Information for Japanese and International Audience

One of the most difficult tasks was preparing separate text for the Japanese audience and another for the global audience. The visual message of the flags and lines could be interpreted by each audience from their respective positions, but text would require different wording to reach the differing approaches. JSF was first designed in English, but simply translating the English into Japanese would either be incomprehensible or insensitive to the Japanese audience. For example, the objective of JSF is explained in English from the sender’s point of view as:

‘Local scenery and everyday objects around the sender cropped behind the flag contains the moment of remembering Japan in your life as you offer a moment of silence. ... The line which ties the two locations is the evidence of shared thoughts from one person to another.’

In the Japanese version, this is explained from the receivers point of view as:

‘In the background, the everyday life of the sender is revealed, and shows the moment in their lives that the sender is remembering Japan. ... When you open a flag, a line is drawn to show the sender that you have received the message.’

In the Send Photos page the Japanese text added a line to explain that the English text is explaining to an international audience how to send the message to Japan. This was in response to queries from the Japanese audience asking if they too were required to send photographs in order to participate and it was thought necessary to explain to Japanese viewers that they only needed to accept the messages.

Taglines also required similar adjustments. ‘We are thinking of those affected by March 11’ in the English version, became ‘There are people all over the world who remember about the Earthquake of March 11’ in the Japanese. Almost all text on the JSF site has been constructed to reflect the differing points of view.

One exemption was the popup infobubble, which appears along with the line animation. This was not translated into Japanese. The translated words for ‘You are here’ and ‘Your Message was shared’ seemed too long and awkward and was thought to be a hindrance to easy communication. ‘You are here’ seemed easy enough for most Japanese to understand and simply recognizing the intent would be sufficient to accomplish the purpose of the infobubble. However now, in retrospect, it is felt that even clumsy Japanese would have been better. The sudden intrusion of English on the Japanese website is jarring and incongruous.

3.6.2. Mobile Site

For the first prototype, mobile access was not designed. If you accessed to japansupportflags.com from a smartphone, it just showed exactly the same site as for the PC browser, with no adjustment for size. Links, photographs and information were awkwardly cut off. The site was able to be displayed, but was not viewable

or functional. An optimized mobile site was specifically designed in the second iteration (Figure 29). Functions were intentionally limited to project description with screenshot image of the map and lines, flag making instructions and a link to send an image by email only. The site itself could not be viewed and a message requesting the viewer to view the site on a PC browser was shown. This is because the main visual message of the JSF site of connections on the Map could not be displayed adequately on the small phone screen. A Mobile site would have required a completely different interface design. There was not enough time to explore this option. The rapid emergence of the smartphone as the primary web browser means that user interface design for mobile access is a major area for future exploration.



Figure 29. The Mobile view

3.7 Launch of the Website

The completed website was opened to the public on 6 March 2012, a few days before the one year memorial of the 3/11 Earthquake (Figure 30). This was conducted in concert with the second art exhibition of the JSF. The response to the completed site will be discussed after the description of the second exhibition. When the prototype was revealed it was shown and explained directly to a circle of friends and to people who visited the first exhibition site in Kuori. This time, however, the main channel for dissemination was through Facebook and almost no direct face to face interactions were conducted. Flag cards were supplied at the installation site, but since I was not present, no direct communications were attempted.

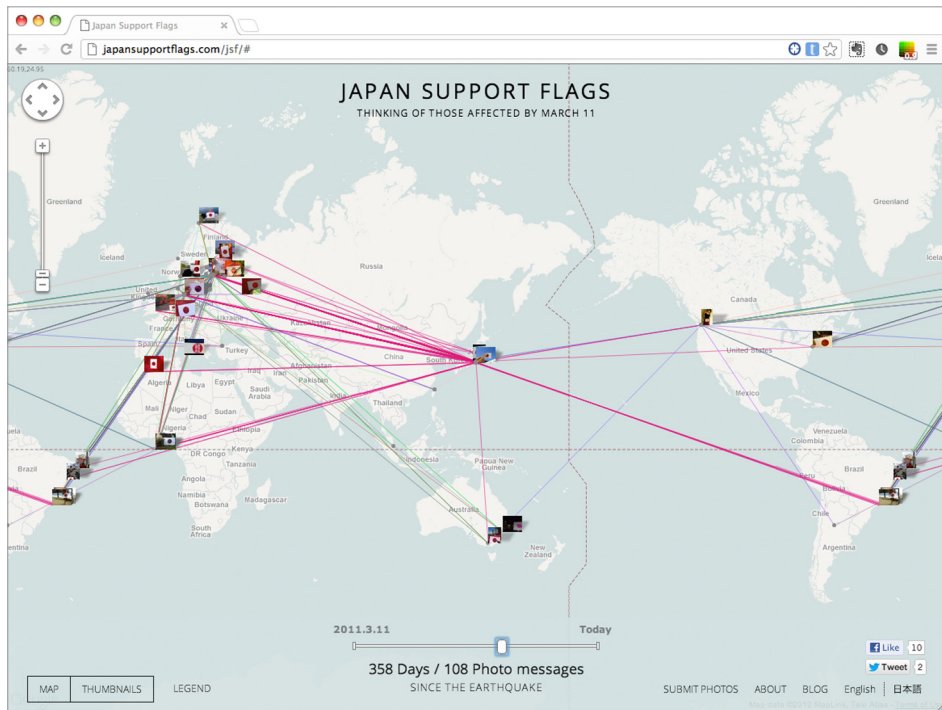


Figure 30.
Completed website



Figure 31.
'to/from' exhibition

3.7.1. Second Exhibition

The second exhibition, which was titled 'to/from', was held at the entrance lobby of Aalto University School of Arts, Design and Architecture from 6–11 March 2012 (Figure 31–36). It was a joint exhibition held with media artist Ben Dromey whose work also dealt with the ongoing struggles experienced by many in the Earthquake hit regions of Japan. The title expressed the reciprocity of messages over long distances. The uploaded photograph messages were printed and displayed in postcard size (10x15cm). They were arranged in a circle on the floor. Red strings were attached to the centre of each photograph and the other end attached to the ceiling, pointing towards the direction of Japan and creating a pyramid shaped space. Flag cards and a brief description of the project were made available for dissemination.

This Installation was displayed in the most heavily trafficked area of the University and was viewed by a large number of people. The Exhibit stimulated strong responses. The space created by the pyramidal strings seemed to many like a birdcage or prison defying entry to outsiders. It symbolized the frustration felt by many who wanted to help the people effected by the Earthquake, tsunami and nuclear disaster, but remained essentially outsiders, unable to enter the relief effort which would have to be done by the Japanese themselves. Outsiders could not penetrate within the circle marked by the red lines, which seemed to symbolize the insularity of Japan as well as its determination. Some remarked that it expressed a



Figure 32.
'to/from' exhibition



Figure 33. 34. 35.
Figures on both pages: 'to/from' exhibition

hidden feeling of both Japanese and international audience. Since it was intended to be an accurate three dimensional transcription of the website, the unexpected response was a complete surprise. However in retrospect, this should have been expected as different mediums convey different messages. A photograph of this Installation was made public on Facebook as part of the JSF project and directed viewers to the project website.





Figure 36.
'to/from' exhibition

3.7.2. Response to the Website

After going public with the completed website, 14 new photographs have been uploaded to the site up to 21 September 2012. Almost all the new photos show a basic understanding of the process and objectives on the site and show Japanese flags taken with self-made white flag cards overlaid on snippets of daily life. There is one photograph sent from Tufts University Japanese Culture Club that shows a group of more than one hundred people wearing red and white shirts standing to mimic the Japanese flag, demonstrating a concept different from JSF (Figure 37). However, even this example exhibits a deeper understanding of the objectives of the site and presents an original idea for implementation.

Out of the 14 new photos, 6 were sent from my friends. The remaining 8 photos were from people with whom I have no relationship at all. This is in comparison to the fact that there was only one photo from unknown strangers during Mock-up and prototype stage, excluding those from strangers who visited the Installation site. The enlarged audience can be recognized.

The completed site retains the photographs and connection lines from the mock up and prototype sites. Excluding 2 duplicates, there are a total of 120 photographs as of 21 September 2012 (Figure 38 and Appendix). The breakdown of countries from which photos have been received is shown in Chart 1 and those countries from which the site has been accessed is shown on Chart 2. The actual access from 31 countries indicates that the project is not limited to friends and family, but has succeeded in reaching a global audience. On the other hand there are 19 countries from which access has been recorded, but no lines drawn. This means that someone from these countries accessed the site, but did not open any photos. What kind of improvement is necessary to reduce these instances is a problem for future study.

3.7.3. Wrap Up of the Second Iteration

The anniversary of the Earthquake provided a good opportunity to reflect on the

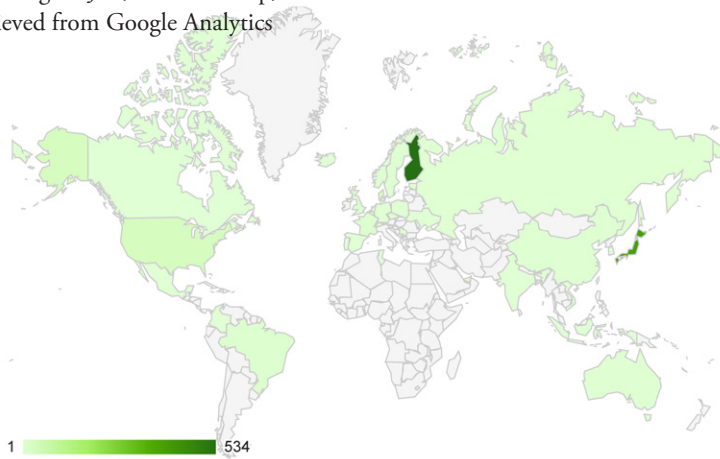


Figure 37. Photograph uploaded from Tufts University Japanese Culture Club on 8 March 2012

	Country	Photograph
1.	Finland	68
2.	Denmark	17
3.	Japan	7
4.	Brazil	7
5.	USA	5
6.	No location data	4
7.	Norway	3
8.	Australia	2
9.	UK	2
10.	Morocco	2
11.	Italy	1
12.	Germany	1
13.	Korea	1
14.	Russia	1
15.	Spain	1
	Total	122

Chart 1. Breakdown of Uploaded photographs during 22 Jun, 2011– 21 Sep, 2012 by Country and Numbers

Chart 2. Countries with recorded access to the website during 22 Jun, 2011– 21 Sep, 2012
Data retrieved from Google Analytics



Country			Country		
Visits			Visits		
1.	Finland	534	19.	Russia	2
2.	Japan	388	20.	UAE	1
3.	United States	32	21.	Belgium	1
4.	Denmark	28	22.	Canada	1
5.	Brazil	10	23.	Colombia	1
6.	France	10	24.	Czech Republic	1
7.	United Kingdom	9	25.	Estonia	1
8.	Sweden	6	26.	Spain	1
9.	Netherlands	5	27.	Indonesia	1
10.	Norway	4	28.	India	1
11.	Australia	3	29.	Iceland	1
12.	China	3	30.	Mexico	1
13.	South Korea	3	31.	Portugal	1
14.	Singapore	3	32.	Serbia	1
15.	Switzerland	2	33.	Tunisia	1
16.	Germany	2	34.	Ukraine	1
17.	Hong Kong	2	35.	Vietnam	1
18.	Poland	2			
				Total	1,064

objectives of the site. Over 5000 connections have been established and a beautiful pattern of lines crisscrossing the globe has been woven (Figure 39). This tapestry of 'Shared Emotions' is what was first envisioned at the start and now exists in reality. Especially the dense pattern around Helsinki is overwhelming. On the other hand, the actual numbers of photographs uploaded to the site remains low, highlighting the difficulty in getting people to take action and participate. The installation allowed me to inform people who could not be reached through the web alone. Even when promoted through Facebook, the photographs of the installation evinced stronger responses and emotions.



Figure 38. Examples of uploaded photographs.
Clockwise from top left: from Finland, UK, Brazil,
Denmark and Australia

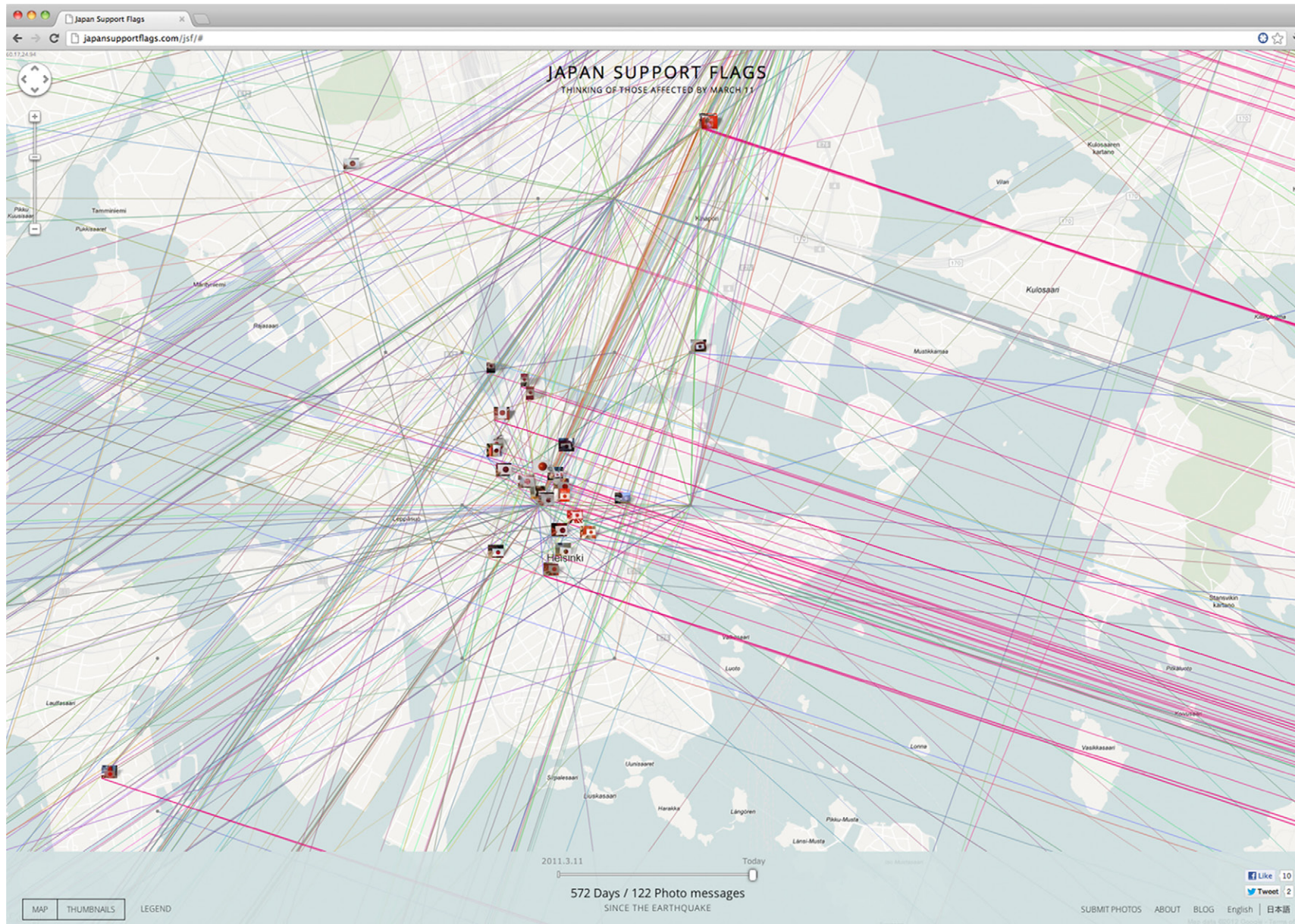


Figure 39.
Connected lines around Helsinki
area, as of 3 Oct 2012

4 CONCLUSION

4.1 Achievements

In the final analysis, it can be stated that the five objectives in the original design concept for the project reiterated below have been achieved. The objectives of the project were

- to show the supporting messages from the world to Japan,
- by non-verbal means (communicate empathy without translation),
- to make it interactive to relay recipients' response,
- to personalize the message, and
- to produce it over digital media.

The concept of using photographs and flag cards to create non-verbal support messages for Japan proved to be a clear, simple and easily understood concept and was successfully implemented with the intended results.

Text based messages require translation from the original language into Japanese and often display awkwardness, which prevents native Japanese speaker from fully empathizing with the message. Use of photography as the media for messages enabled the sender to convey sympathy without a language gap. The simple mechanism of

the flag card succeeded in giving a clear message through photographs. Although the main focus of the photos was the Japanese flag, the slice of life moments captured in the background helped to convey the reality of a real person somewhere far away sending the message. Elements such as hands holding the cards, the size and position of the flag card made each photo unique and personal compared with the often bland repetitive verbal messages.

It also succeeded in capturing the need of people who want to do something for the victims of the Earthquake, but did not know what to say especially after some time has passed. Another consequence of using photographs was that each message had a certain leeway in interpretation. Reviewing other similar support sites with verbal messages, it is noted that composing a unique verbal message is difficult and the message does not change over time. Without a clear idea of who will read the message and their unique situation, writing a personalized message is difficult. A photograph, on the other hand, can easily capture and relay the thoughts and subtle feelings of the sender. Moreover, the receiver could interpret the message as they feel.

A certain positive mood of the site in opposition to the prevailing pensive tones of other sites should also be noted. There is an unavoidable darkness contained in the verbal messages sent immediately after the quake that makes rereading the messages now emotionally taxing. The photographs uploaded to the JSF site start from June of 2011 and continue over a long and changing period. However, all the photographs are imbued even now with a certain positive brightness and warm feelings of remembrance. This feeling derives from the slice of life elements in the background of each photographic message which provide a degree of cheeriness and lightness. This 'festive' atmosphere provides an emotionally pleasant stage where person to person connections can be formed. The underlying objective of enabling messages that are capable of being interpreted in a wide range of possibilities has been attained.

The site succeeded in connecting the Japanese audience with a global audience and between different parts of the global audience using digital media on the web. While support messages sent to Facebook and other relief project sites did not care if

the message had been actually received, the connection lines brought the interaction into sharp focus by displaying that the message has been received by someone and also that the sender and the receiver had been connected with empathy. Since the lines also visualize the connection between individuals in the international audience, it implied that sympathy towards Japan was being widely shared and the connection is widely spread. In addition, the interface design of line together with world map presented intuitively the reality of someone far away who had been thinking about Japan. Although it is different from the immediacy of the 'here and now' of art installations, the 'everywhere, anytime' paradigm of the web is the essence behind the Project.

4.2 Found Challenges

On the other hand, the number of the photographs actually being uploaded to the site did not gain by any large number despite the fact that there were more than 5000 connection lines created. Many people empathized with the concept and took home the flag cards, but there were only a few who crossed the high hurdle to actually take photos and upload them to the site. Steps were taken to emphasize that the flag cards could be of any size and further simplifying the uploading process, but no significant improvements in participation were observed. Uploading photographs to Facebook or other photo sharing services are getting more and more common behaviour. Therefore the will required to upload photographs should not be an obstacle for most people. What was missing in JSF? The possible reason is that JSF didn't fulfil the 'esteem needs' enough. The line which indicates the acceptance of the message has the same meaning as the 'Like' button of Facebook. However, while the Facebook Like button implies various positive feelings such as 'Nice', 'I am interested in', 'I agree' or 'Cute', the line only represents the fact that someone at a certain place has received the message. It was not possible to interpret the line as 'Thank you', 'I am encouraged', or 'Nice photo' although that was the intention of me. The idea to display 'Thank you' with line was examined, but rejected because one of the aim of the project is to eliminate textual information. JSF didn't demand

for any input from the recipient other than to click a photograph. This is to prevent the recipient from feeling forced to reply in return to the message, especially because the main recipient is expected to be the victims of the Earthquake. This has resulted in making the response from the recipient being weak and not enough to fulfil the esteem needs of the message sender. In addition, the sender will not know that someone has seen the photo unless he visits the site again. The lack of feedback system could be noted. This also brings up an issue for the recipient of the message. The system is designed to be as easy as possible for the recipient of the message. The mechanism by which the input of just viewing the photos sent the feedback to the sender that the message had been received did not provide a concrete sense of achieving anything. The effort to reduce burdens on the recipient may have resulted in reducing the amount of emotional involvement in the communications.

Many people perceived the messages by photograph positively and appreciated that it delivered various feelings which could not be framed into text. However, some people perceived no encouragement in the photographic messages. The photographic messages are not as direct as text messages and requires some capacity for interpretation on the recipient's side. The JSF site as a whole speaks in a poetic and indirect voice, which allows for varied interpretation but also becomes obtuse as a support message vehicle.

The distribution channel of the site is another issue. Insufficient consideration was given as to how the JSF site was to be accessed. For example, the title of the project Japan Support Flags will not come up in the search results if someone only inputs 'Earthquake' and 'relief project' into the search engine. Furthermore, choosing the right name for the project is extremely important and affects fundamental elements such as URL of the site. The whole process of the user experience needs to be considered thoroughly.

Another aspect that affected the interpretation of the site was the use of differing text information for the Japanese and international audiences. The language seemed to subtly alter the audience as well as inform it. Although the Internet can seem so freely accessible, in reality language barriers can make reaching out to a wider

audience on the World Wide Web challenging. The choice of any language is actually choosing the audience and closing the web to a large segment of the global audience.

4.3 Reflection on the Design Process

With regards to the design process, I was my own client so concept building and visual designing parts were quickly conducted. Planning details of the interaction required more time. It was necessary to think through every single action, which had to be programmed. After initial decisions, it became progressively more difficult to change aspects that would result in changes to basic elements of the programming. It was even more difficult to change the first sketch. Unlikely a print media, digital media are considered to have a never ending process of 'to be updated'. However, some changes require great effort and require stepping back in the process. Moreover in reality, there are practical issues such as time limitation which prevented the making of further iterations. I realized the importance of thorough planning of user experience design at the commencement and to have all elements of interactive design clearly outlined by the time programmers are brought into the process.

4.4 Future Consideration

The project brought to the fore the challenge in drawing people to actively participate in the project. The incentive of the audience and the system of interactive response which delivers subtle and simple positive emotions must be investigated further.

In a related concern, a project which would support the victims more directly may well be left for future consideration. The JSF project turned out to have difficulty in reaching the people who actually experienced the Earthquake and tsunami although it found another significance of existence. The free publication World 'KIZUNA' Graph (2011) mentioned at 2.1.4 could be touched on again as a good example in delivering the messages from the world to the victims. The issue is published in different formats such as web, EPUB, Kindle, and mobile version and

distributed over the Internet so it could be accessed via PC, tablet, smart phone or E-book readers. In addition, PDF document in a size of A4 single sheets is provided. As the publisher claims, after the Earthquake in many cases infrastructures such as roads and communication means are destroyed and messages from the world did not reach the victims. It was paper media on bulletin boards and mobile phones which worked as the primary communication tool. It was expected that the PDF document would be printed out by someone who had the necessary equipment and be distributed or posted on a bulletin board. The publisher also provided a poster to be put up on a bulletin board. The QR code printed on a poster lead the younger audience to the mobile version of the issue which could then be accessed even from feature phones. The publisher brought a printed book to the shelter at Rikuzen-Takata city in Iwate prefecture on April, and the feedback was that people were highly interested in seeing the photograph messages regardless of age (Morita, S. 2011). This is a successful case of delivering the message by both digital and physical media based on a thorough examination on the user's situation. The procedures and system successfully employed here shall be reflected in a further development of the project.

4.5 Last Note

The project has worked well to overcome the language barrier and deliver sympathy between distant audiences over digital media. Many positive reactions were received from friends and acquaintances who learned of this site through Facebook. Many friends were inspired by the site and took on themselves to propagate knowledge of the site. One Japanese friend residing in the USA attended a big event held by the local Japanese consulate on the anniversary of the Earthquake and promoted the site to attendants and visitors. The response was highly encouraging. Most people understood the concept within half a minute with an overwhelmingly positive response. Another Japanese friend introduced the JSF site in her blog carried by a Japanese fashion site. One response to the blog said, 'I am very thrilled to learn that people all over the world are remembering and praying for Japan on the one year anniversary. The world is truly One.' Another person who sent a photo related that,

'Ever since, whenever I see something red, I recall Japan.' These are an indication that the site will continue to provide a vehicle to remember the Earthquake and provide support to affected people. This is indeed the very first impetus, to promote the day by day accumulation of grass roots connections that had been at the root of the creation of the project.

Nevertheless, it is needed to remember that the situation of the stricken area is severe and there is a limitation in this kind of moral support project. I believe that design can serve to create better life thorough better communication, and earnestly wishes to deliver such quality when it is needed.

In closing, I would like to express my deepest sympathy for the victims of the disaster and those engaged in the huge effort of recovering and rebuilding, and would also like to express deep gratitude to all the kind support from the world for Japan.

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APPENDIX Uploaded Photographs



